Understanding Medi-Cal's Child Population

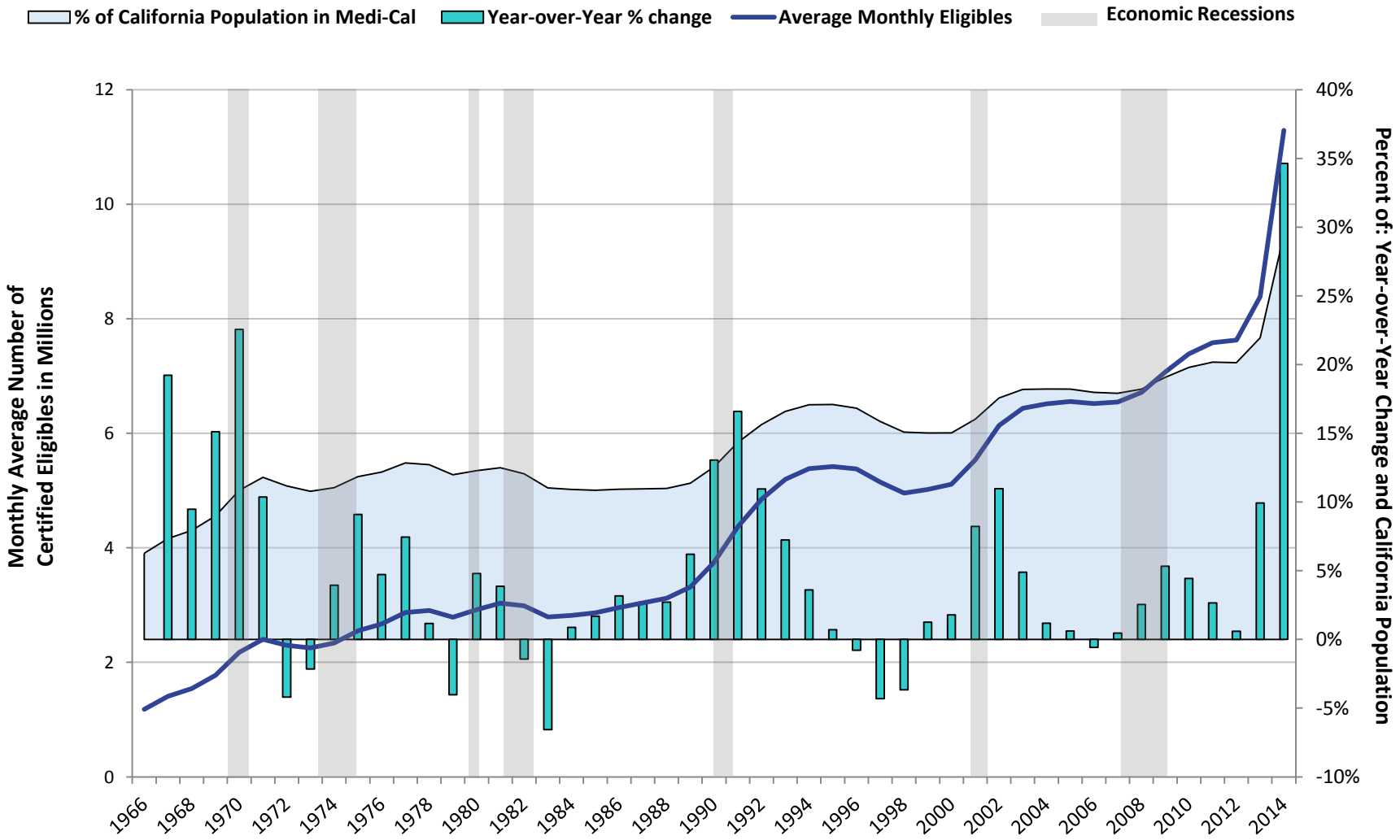
October 2015

Created by the DHCS – Research and Analytic Studies Division

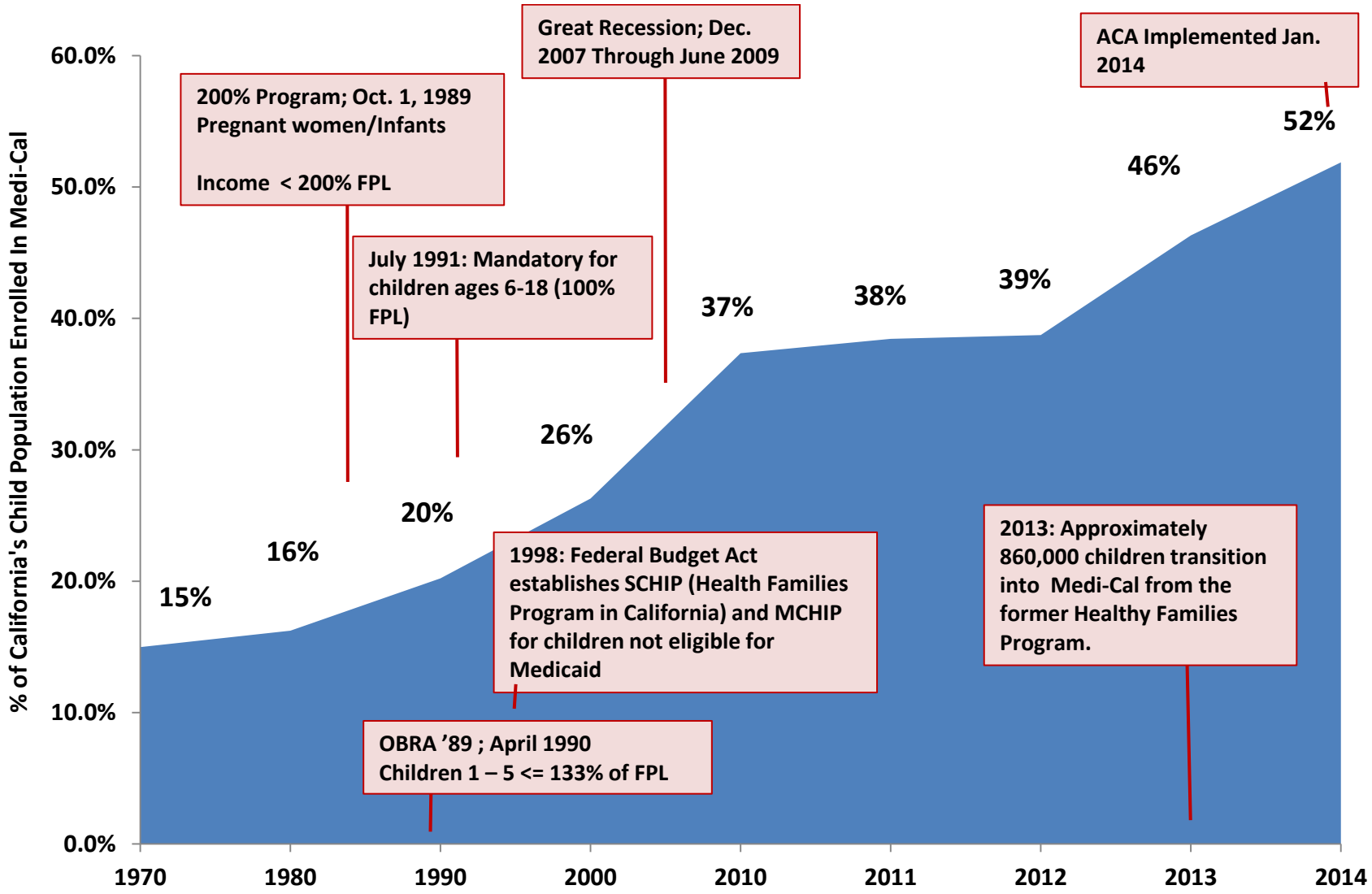
Understanding Medi-Cal's Child Population

CURRENT AND HISTORIC ENROLLMENT

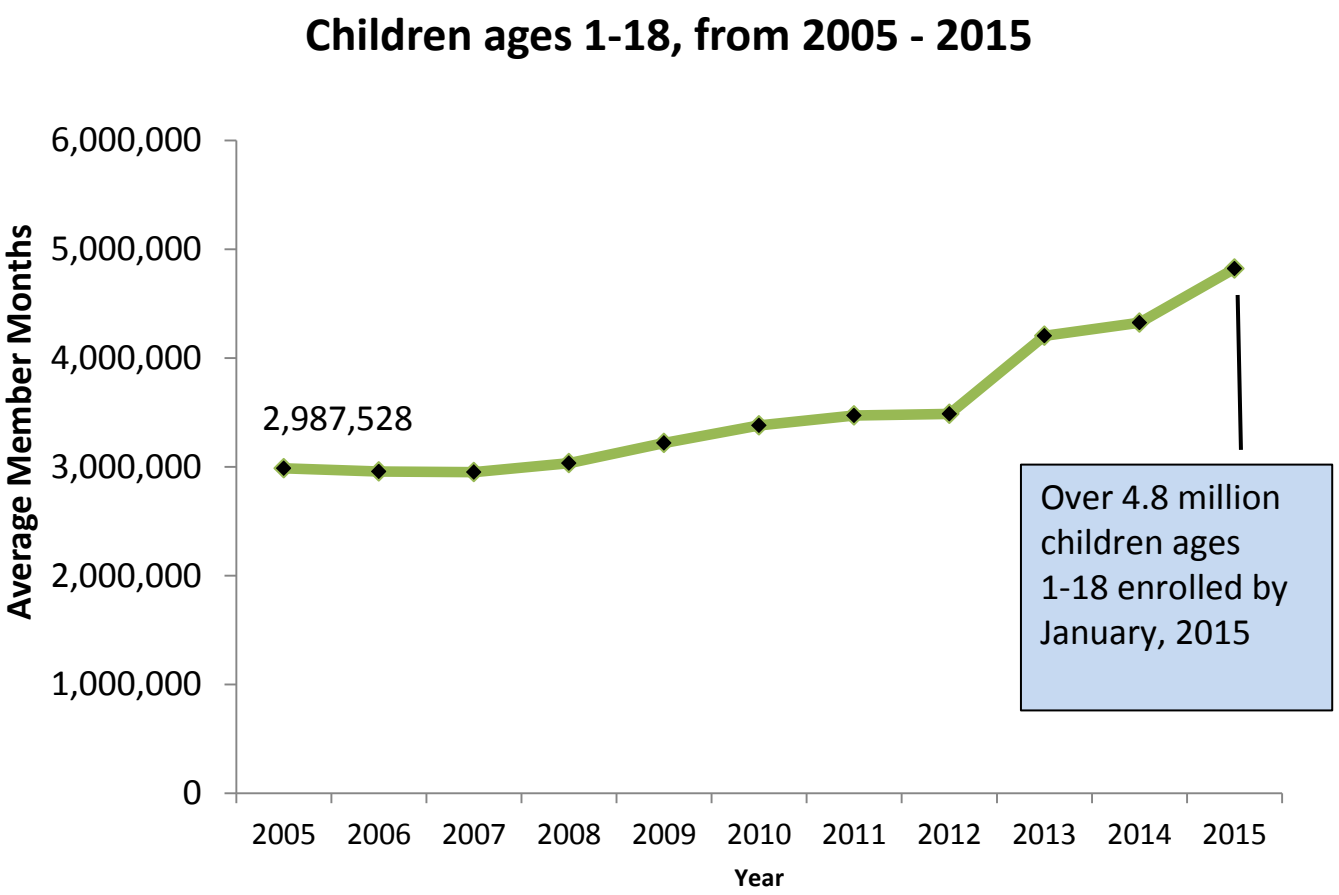
How has Medi-Cal enrollment changed since 1966?



Proportion of California's Children Enrolled in Medi-Cal



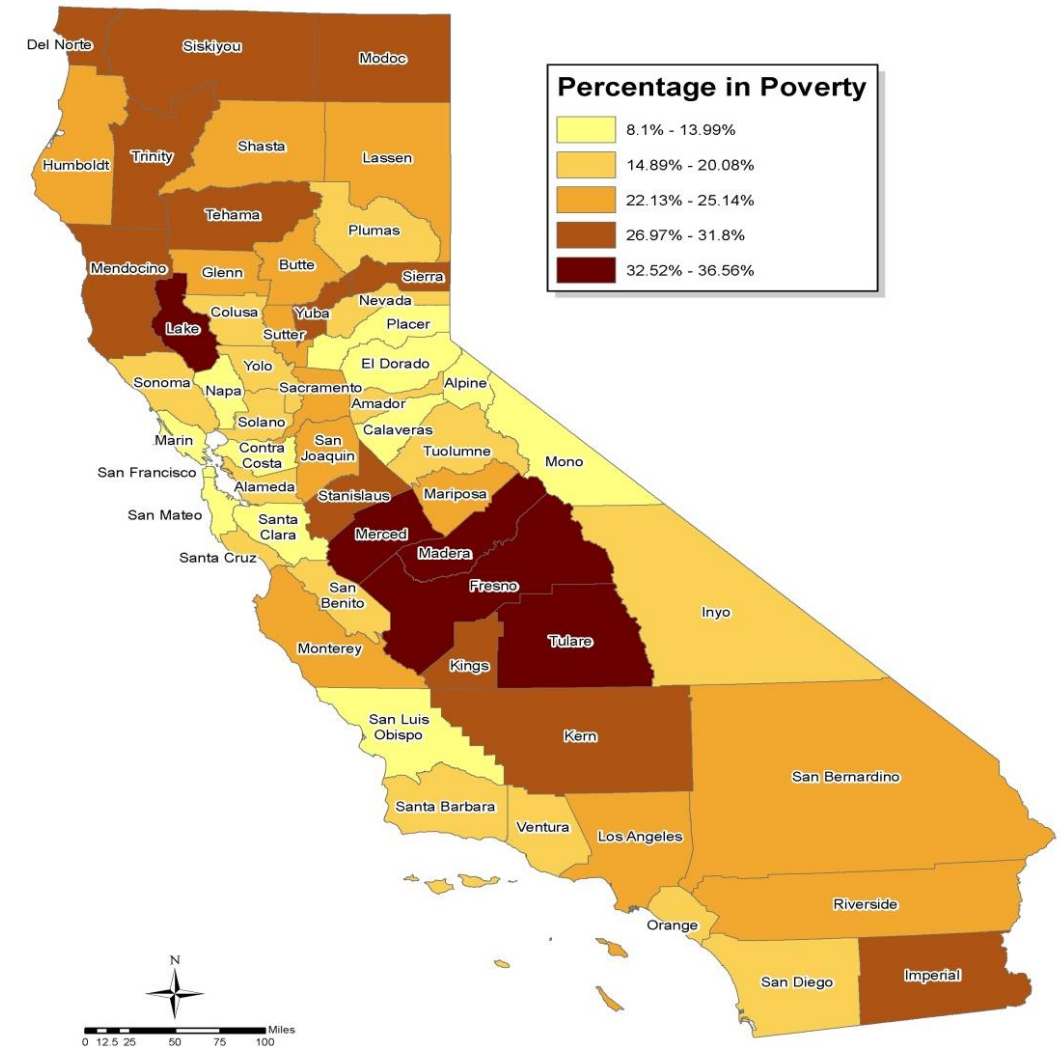
Trend In Medi-Cal's Child Population



In the last ten years, the number of children enrolled in Medi-Cal has increased by 61%.

Significant growth occurred between 2012 and 2015, as Medi-Cal absorbed the Healthy Families population and the ACA was implemented.

Poverty Rates By County For All California Children



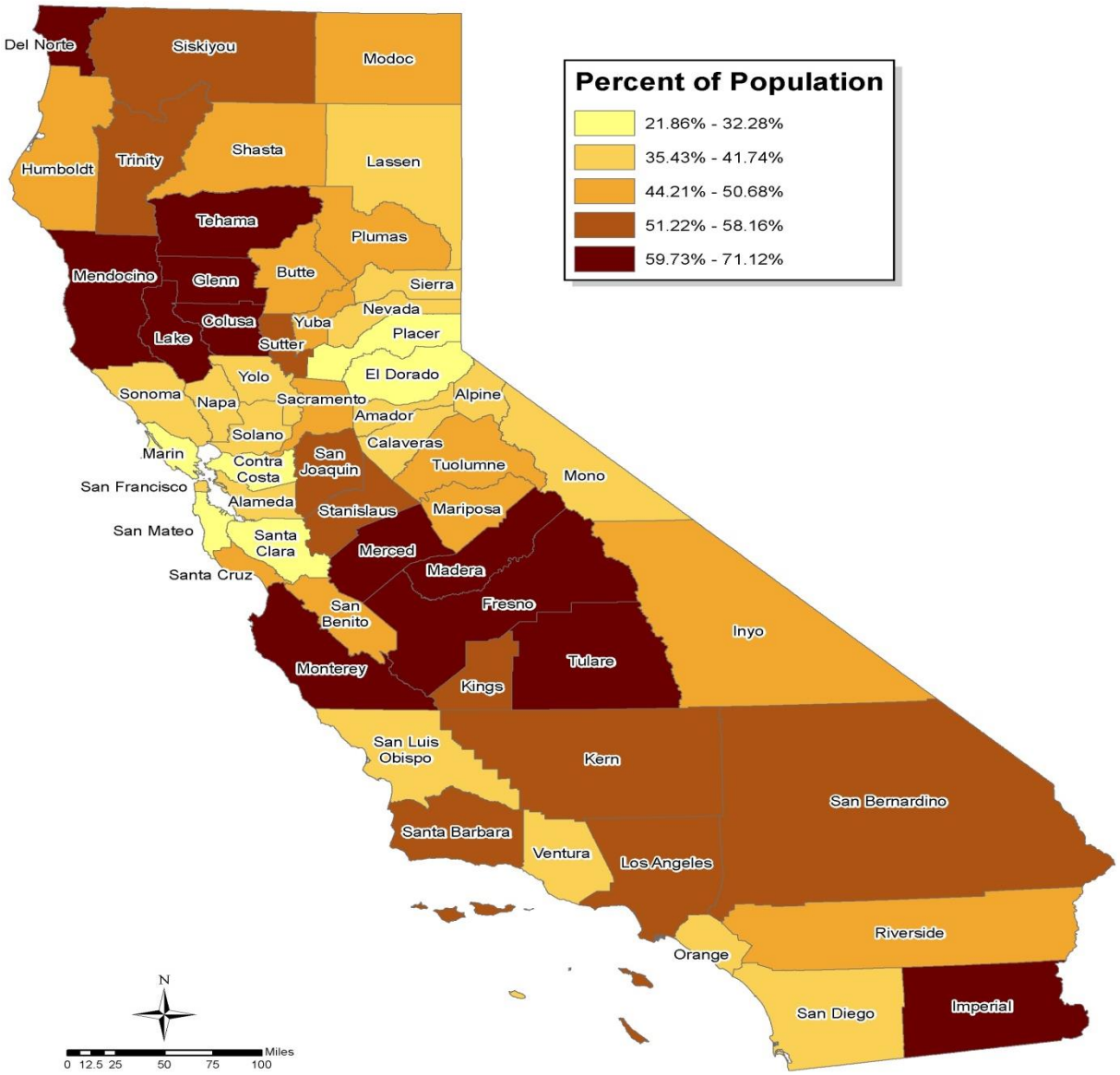
Research & Analytic Studies Division, California Department Of Health Care Services.
Data source: Federal Census Bureau, 2009-2013 5-year American Community Survey.

The highest levels of child poverty were seen in counties located in the Central Valley. The counties of Merced, Madera, Fresno, and Tulare all displayed poverty rates between 32% and 36%.

Northern counties also displayed child poverty rates at or above 22%.

The lowest rates of poverty were seen in the Sierra Range/Foothills, and coastal regions.

Proportion of Children Ages 1-18 on Medi-Cal, December 2013



The proportion of each county's child population enrolled in Medi-Cal ranged from 21% to as high as 71%.

The Central Valley counties of Merced, Madera, Fresno, and Tulare all had proportions of children on Medi-Cal above 59%.

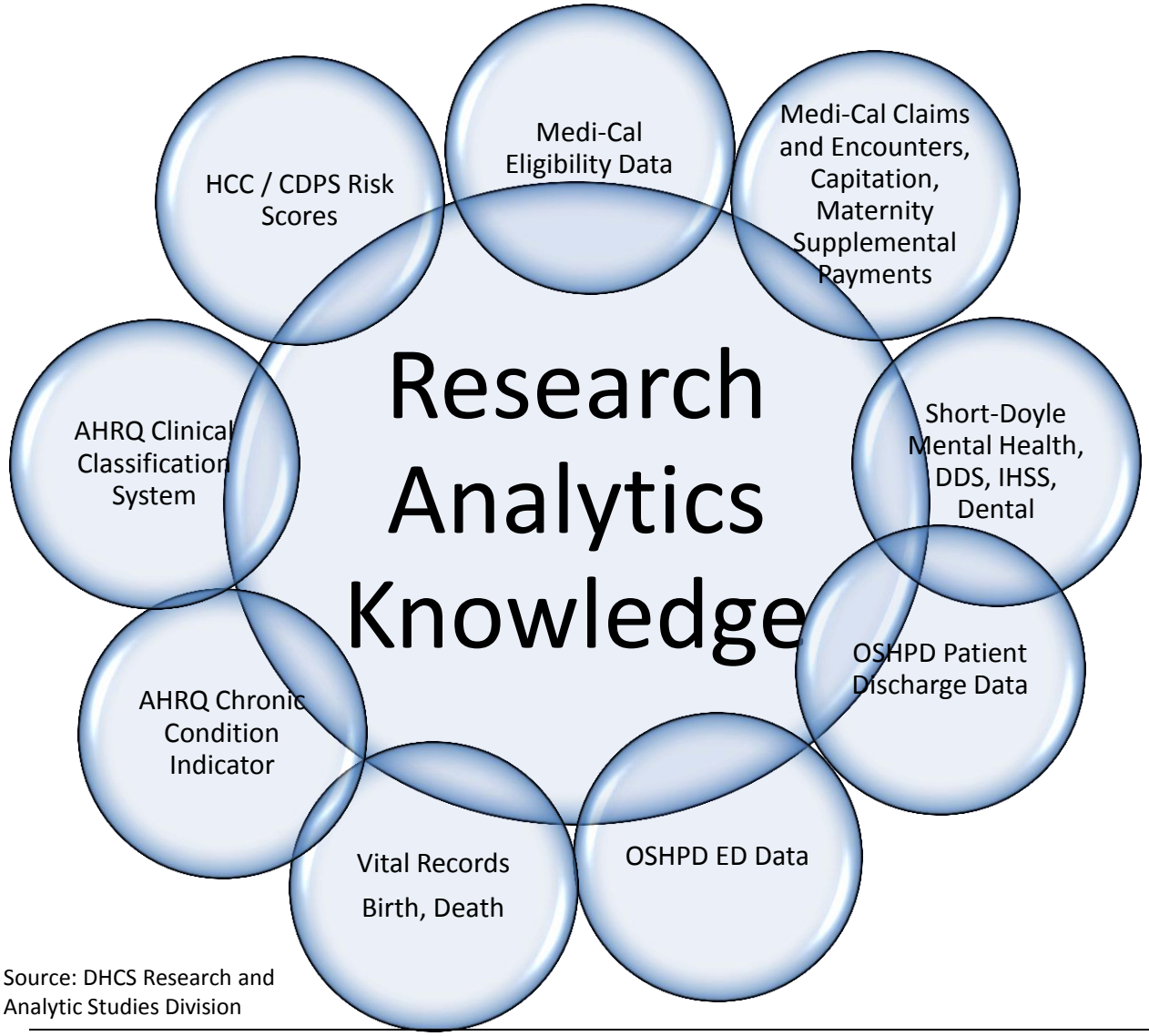
A cluster of five northern counties also had over 59% of their child population enrolled in Medi-Cal. These counties were Colusa, Glenn, Lake, Mendocino, and Tehama.

Understanding Medi-Cal's Child Population

In order to develop a complete picture of the child population, RASD queried data from a variety of sources pertaining to the demographic, administrative, clinical characteristics, spending, and the utilization patterns of Medi-Cal's child population.

The study population for this analysis included all certified Medi-Cal beneficiaries between the ages of 1 and 18, eligible for at least one-month during calendar year (CY) 2011, and eligible for Medi-Cal coverage only. Children participating in Medi-Cal's traditional fee-for-service system and those participating in managed care plans were evaluated.

Ingredients Used For Analysis



Source: DHCS Research and Analytic Studies Division

To construct a complete picture of Medi-Cal's spending and utilization for children, RASD queried multiple data resources, utilized the Agency for Healthcare Research and Quality (AHRQ) clinical classification grouping algorithm, and analyzed risk scoring based on the Chronic Illness and Disability Payment System (CDPS) model.

Medi-Cal's Population and Spending

Total CY 2011 (Eligibles: 9,223,275 / Spending: $38.8 Billion)

Eligible for Medi-Cal Only

(Eligibles: 7,914,215 / Spending: $26 Billion)

Medi-Cal/Medicare Eligible (Duals)

(Eligibles: 1,309,060 / Spending: $12.8 billion)

Children < 1 (Eligibles = 466,606 / Spending = $1,162,523,016

Children, Age 1-18

(Eligibles = 4,139,010 / Spending = $9,999,597,101

FFS (E = 956,949 / S = $1.9 Billion)

FFS & Managed Care (E = 766,895 / S = $1.7 Billion)

Managed Care (E=2,415,166 / S= $6.4 Billion)

Adults, Age 19 and older (Eligibles = 3,308,599 / Spending = $14,867,410,177

Medi-Cal Children, Ten Subpopulations

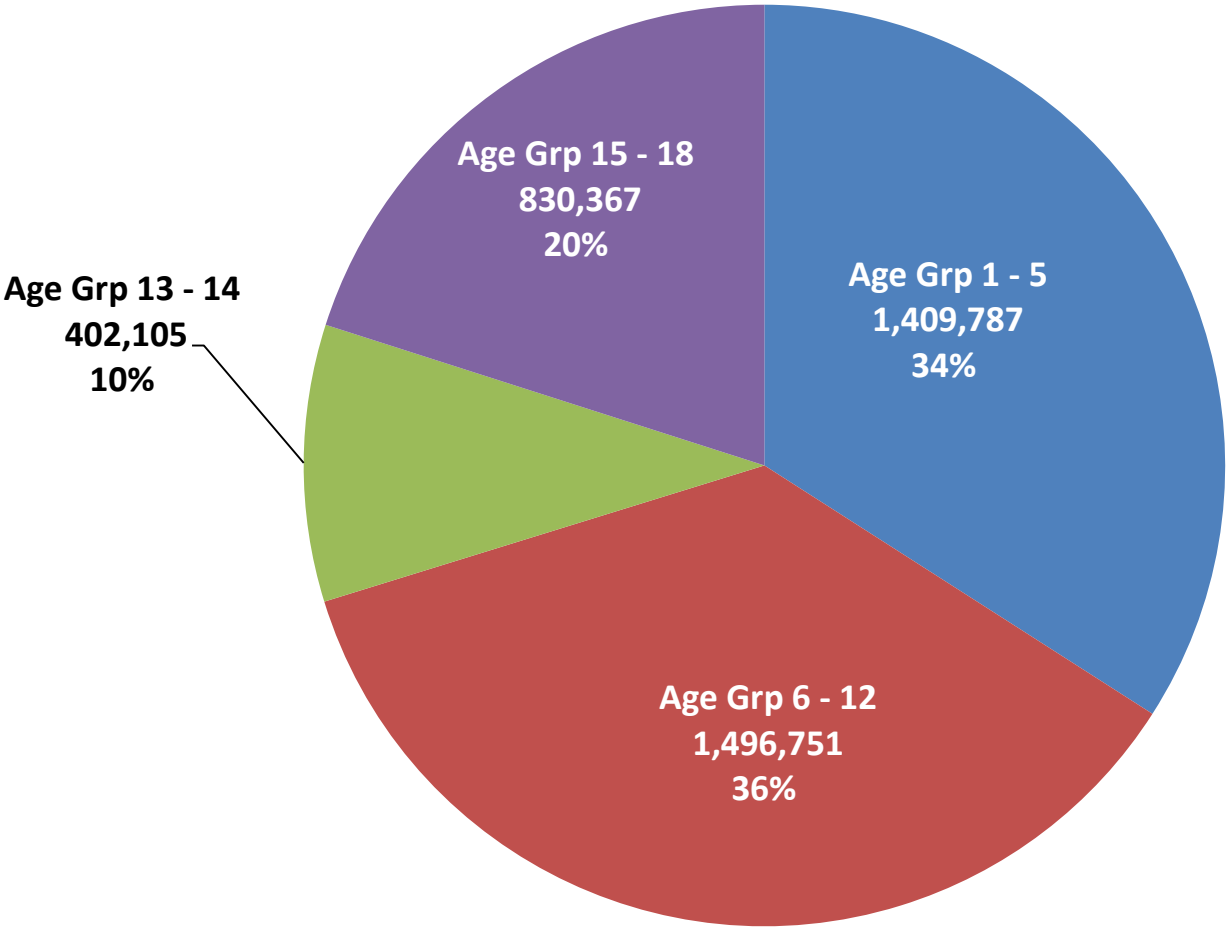
Medi-Cal Subpopulations	Eligibles	% of Total
% Poverty (133%/100%)/Minor Consent	426,447	10%
Breast and Cervical Cancer Treatment	2	0%
California Children's Services	80,160	2%
CHDP Gateway/HF PE/MI Child	248,347	6%
Developmentally Disabled	67,904	2%
Families (CalWORKS, 1931(b))	2,941,274	71%
Foster Care	124,787	3%
Long Term Care	29	0%
Other Disabled	76,638	2%
Undocumented	173,422	4%
Grand Total	4,139,010	100%

There are a number of ways a child may enter the Medi-Cal program. In addition, some populations are also eligible for specific services based on the presence of certain health conditions.

Some children enter the Medi-Cal program due to a disability, some may enter due to their family's income, resources, and other characteristics, while some may enter due to specific living arrangements such as foster care, etc. In other cases, a child may be eligible for certain programs, such as California Children's Services due to the presence of specific qualifying health conditions.

Medi-Cal Children Ages 1 to 18, By Age Group

N = **4,139,010**

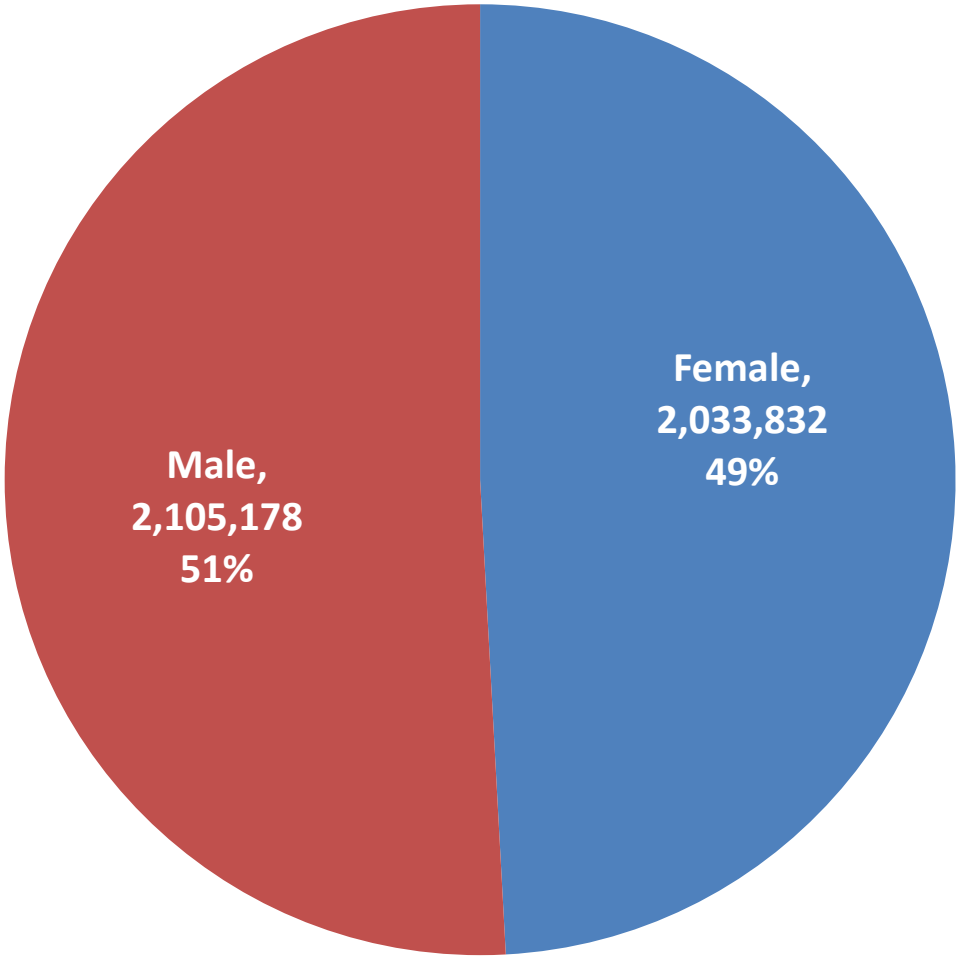


Thirty-four percent of Medi-Cal's children were between the ages of 1 and 5, while 36% were between the ages of 6 and 12.

These two age groups accounted for 70% of the total child study population.

Medi-Cal Children By Gender

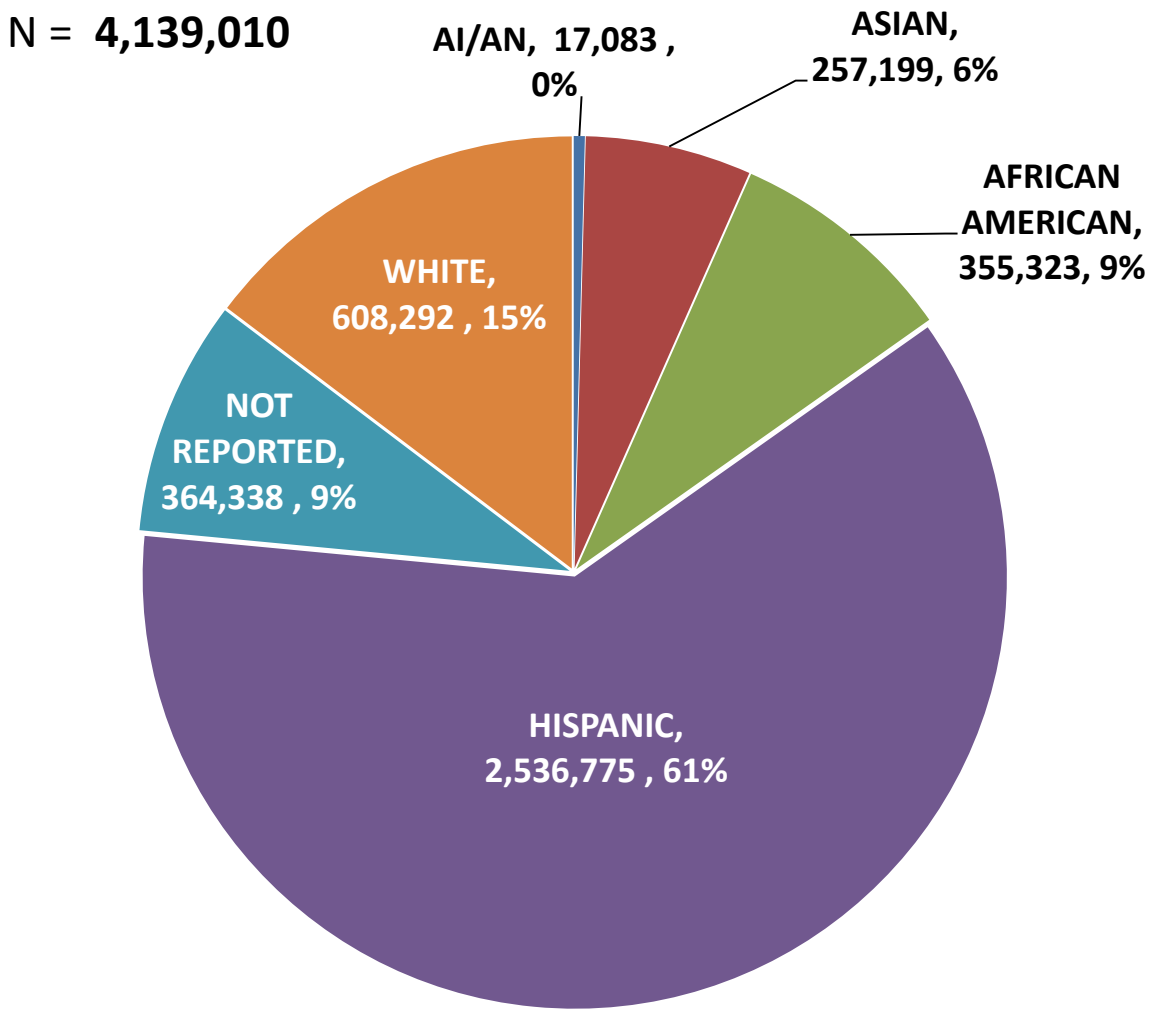
N = **4,139,010**



The Medi-Cal child population was split evenly by gender.

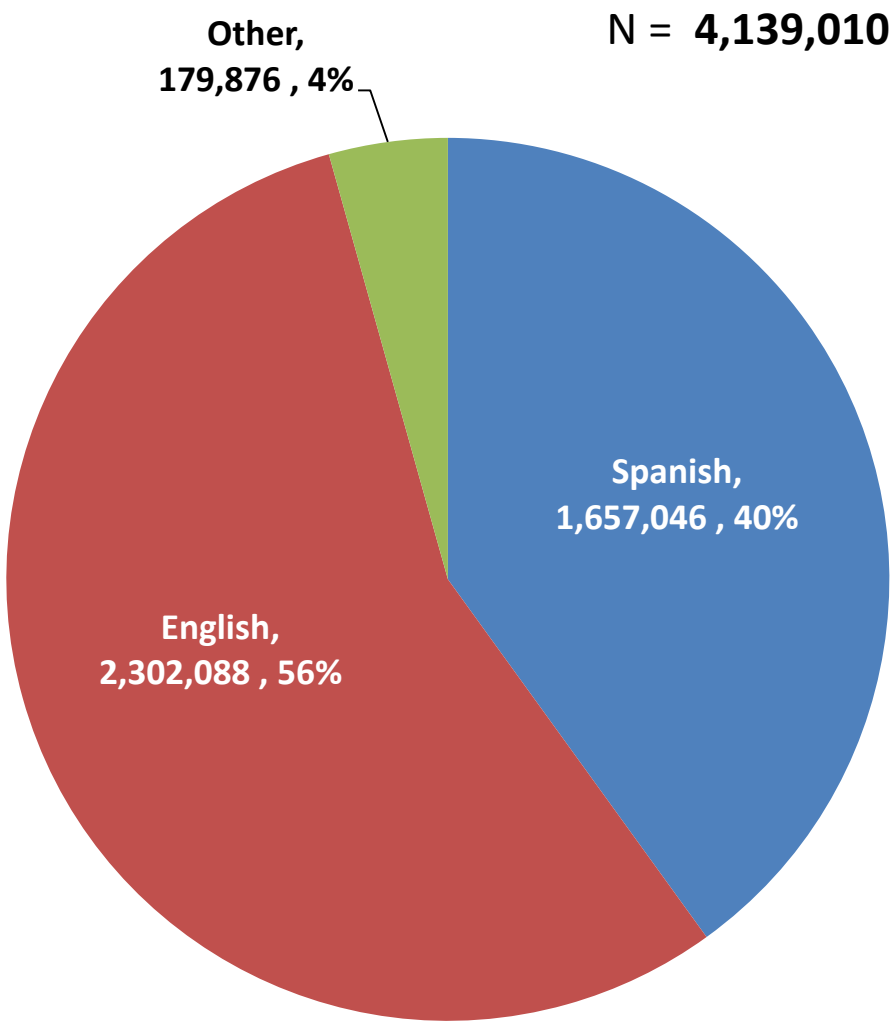
Males constituted 51% of the population, while females represented 49%.

Medi-Cal Children By Race/Ethnicity



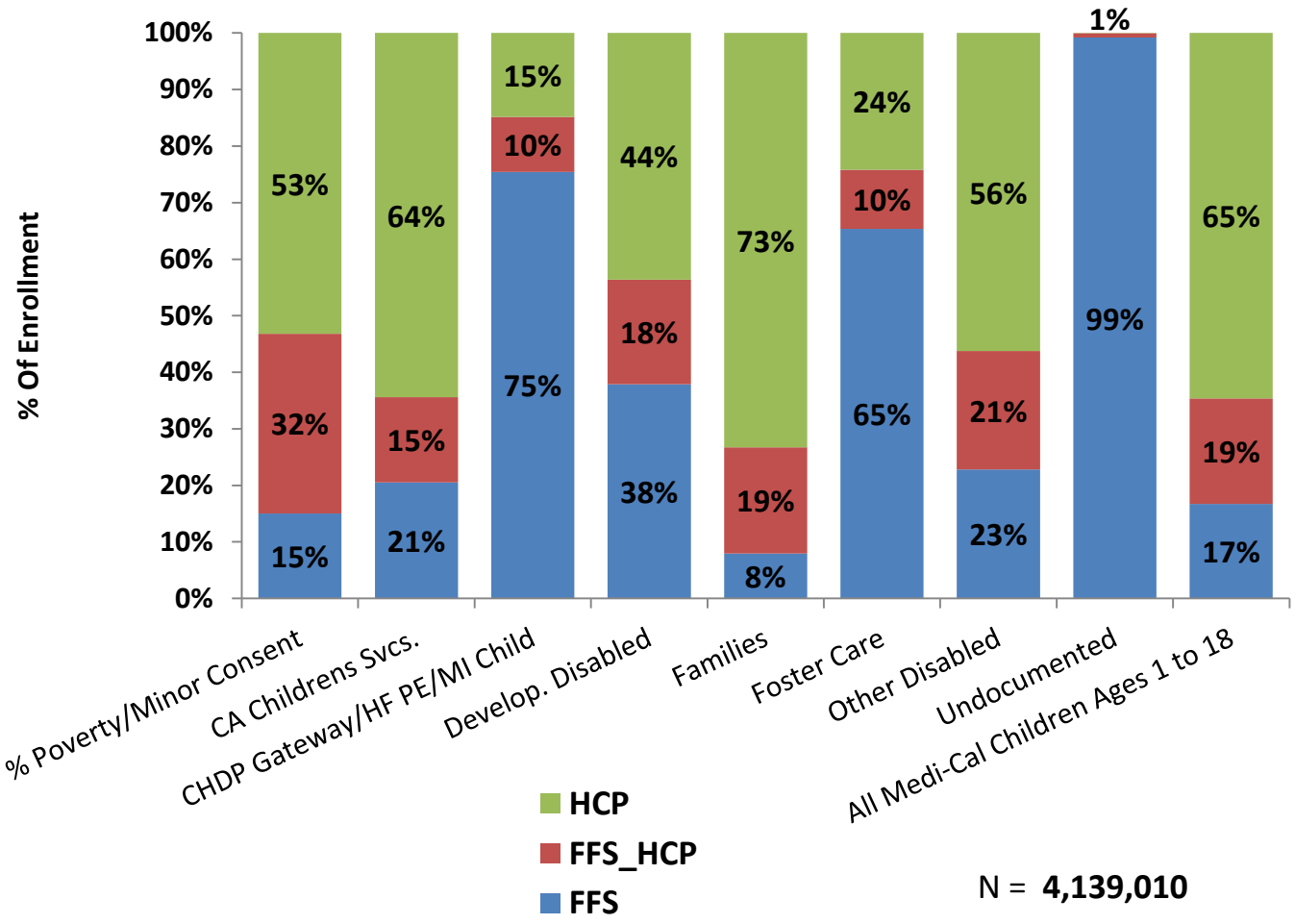
Sixty-one percent of the child study population was Hispanic, 15% were classified as White, 9% were classified as African American, 6% were classified as Asian, and less than one percent were classified as American Indian/Alaskan Native.

Medi-Cal Children By Primary Language



Roughly 56% of the children in the study population claimed English as their primary language, while 40% claimed Spanish.

Medi-Cal Enrollment by Health System Participation, Children Ages 1 to 18



Roughly 65% of all Medi-Cal children between the ages of 1 and 18 were enrolled in managed care delivery systems during CY 2011. Seventy-three percent of children enrolled in Family aid codes, which represented 76% of all enrollment months during the year, participated in Medi-Cal managed care delivery systems.

Some groups, such as those linked to Medi-Cal through foster care, displayed that nearly 2/3 participated in Medi-Cal's traditional FFS system. Similarly, the undocumented participated almost exclusively in Medi-Cal's traditional FFS system. Children entering the Medi-Cal program through the CHDP Gateway or Healthy Families presumptive eligibility pathways may eventually transition to other Medi-Cal eligibility groups and in many cases will transition to managed care delivery systems.

Medi-Cal Children By Geographic Region

Region	Eligibles	% Of Total
Bay Area	486,927	12%
Central Coast	224,027	5%
Central Valley	683,155	17%
Far North	26,448	1%
Los Angeles	1,287,951	31%
North Coast	35,719	1%
Sacramento Valley	246,651	6%
Sierra Range/Foothills	49,963	1%
Southern California	1,098,169	27%
Grand Total	**4,139,010**	100%

Totals reflect Medi-Cal eligible children between the ages of 1 and 18.

Roughly 1/3 of Medi-Cal's child population resided in Los Angeles, while 27% resided in southern California counties other than Los Angeles.

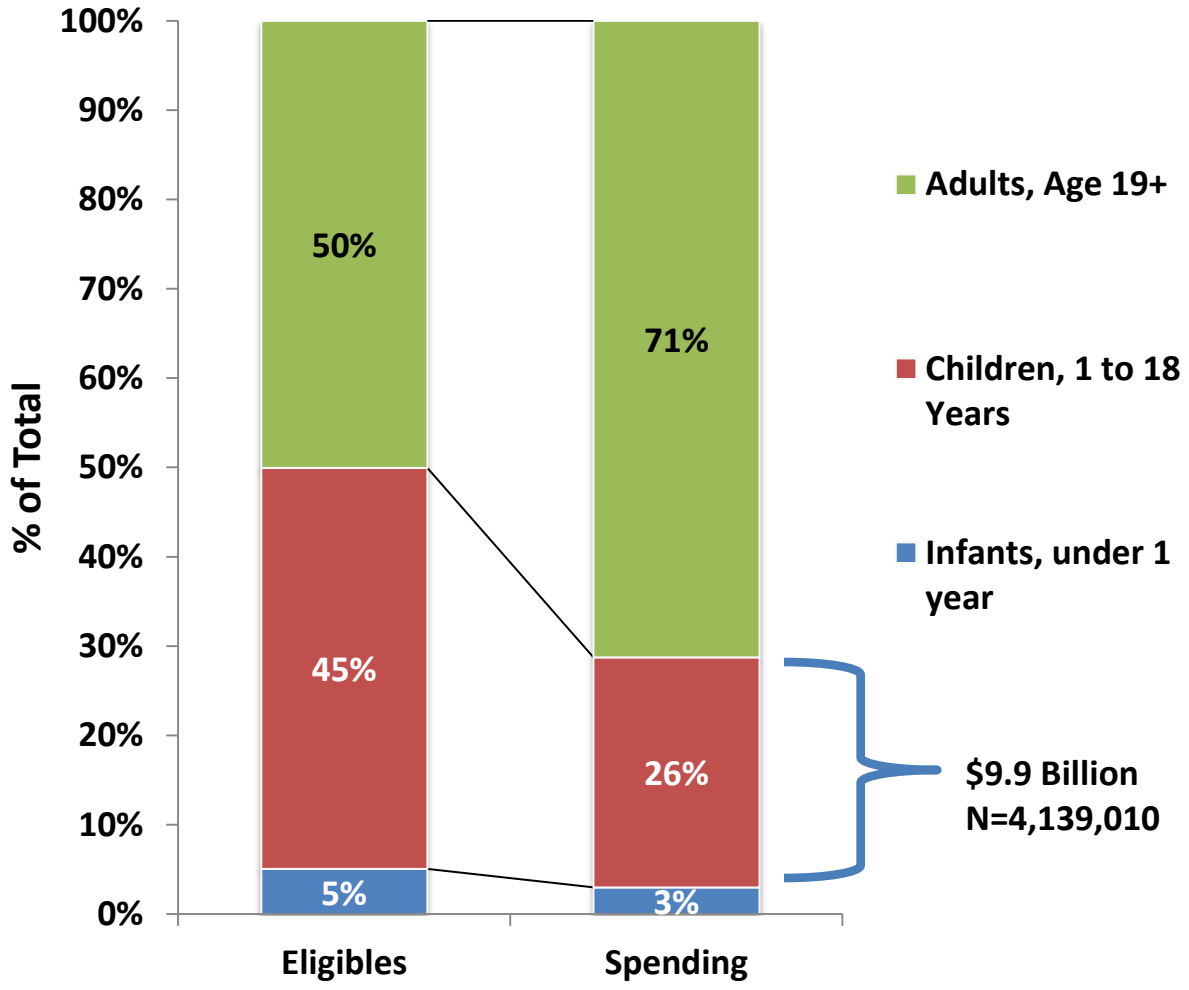
California's central valley accounted for 17% of Medi-Cal's child population, while the bay area constituted 12% of the population.

The central coast, north coast, and sierra foothills combined with the Sacramento valley accounted for 13% of the total child population.

Understanding Medi-Cal's Child Population

MEDI-CAL SPENDING ON CHILDREN

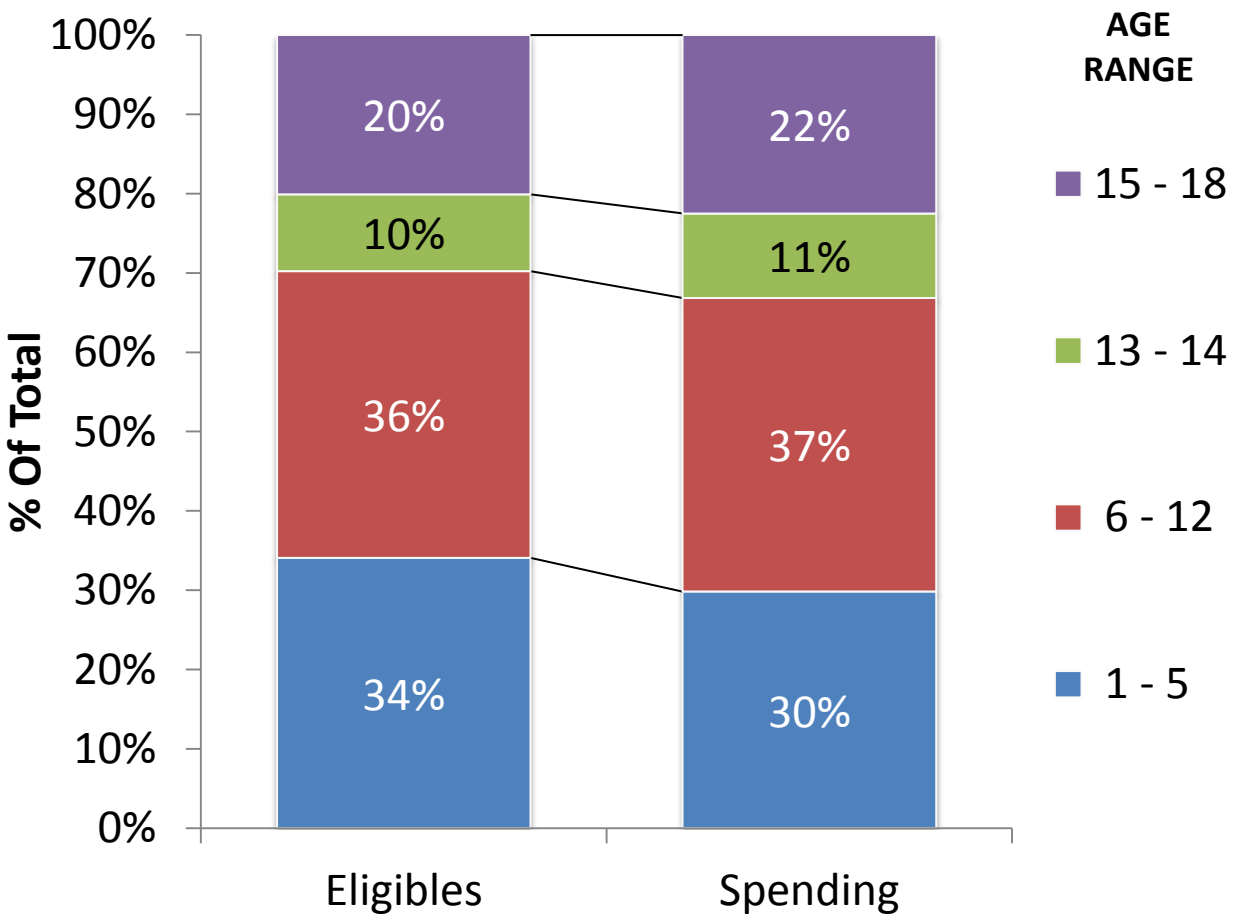
Medi-Cal Spending: Children vs. Adults Relative to Enrollment in 2011; Total Spending = $38.8 Billion



Medi-Cal children between the ages of 1 and 18 accounted for 45% of Medi-Cal's overall population and generated 26% of Medi-Cal's overall spending.

Medi-Cal Spending On Children Ages 1-18, By Age Group

N=4,139,010



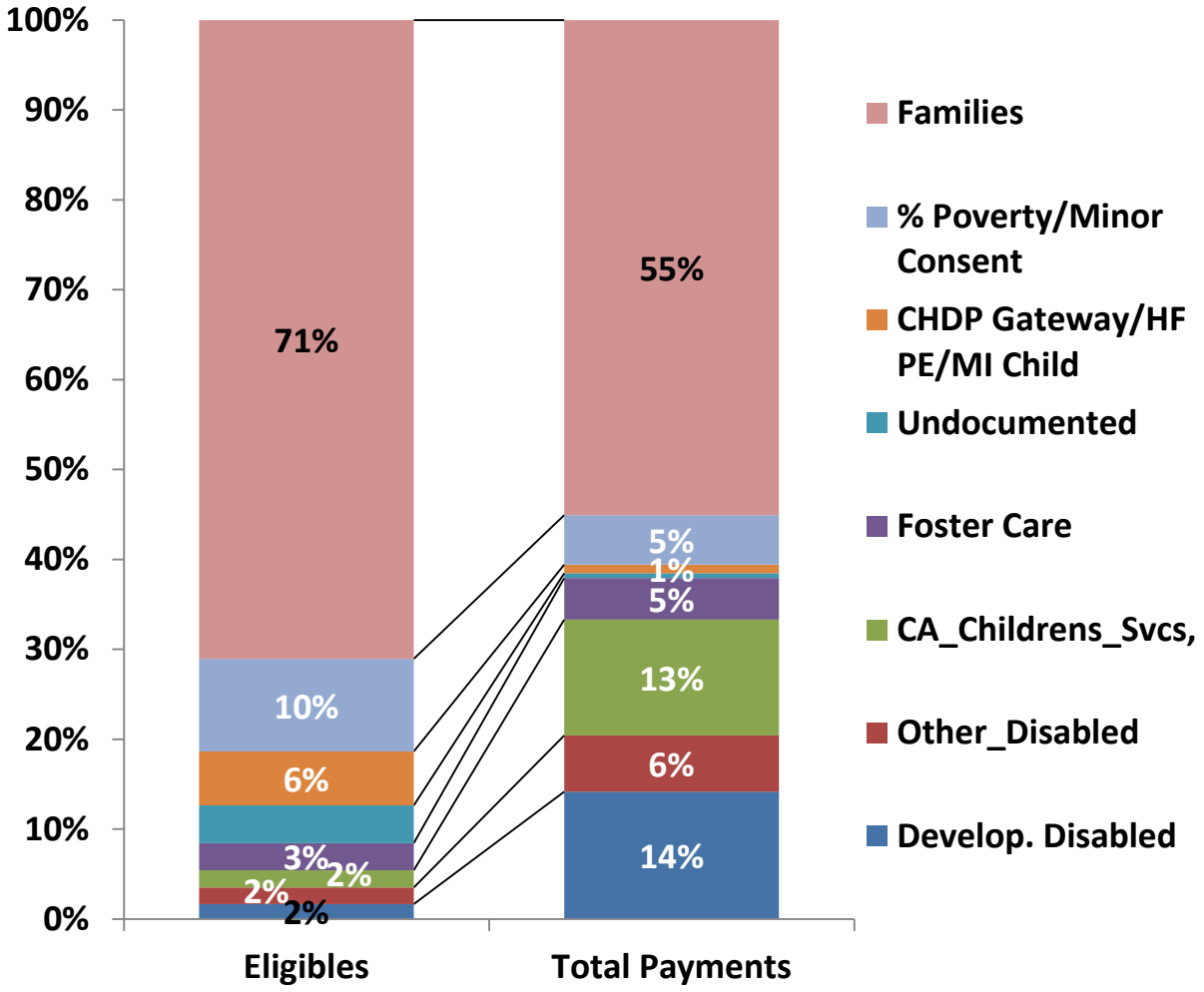
Medi-Cal spending on children between the ages of 1 and 18 by age group was proportionate to enrollment size.

Children between the ages of 1 and 5 constituted 34% of the overall child population and accounted for 30% of total Medi-Cal child spending.

Similarly, children between the ages of 6 and 12 represented 36% of the overall Medi-Cal child population and accounted for 37% of spending.

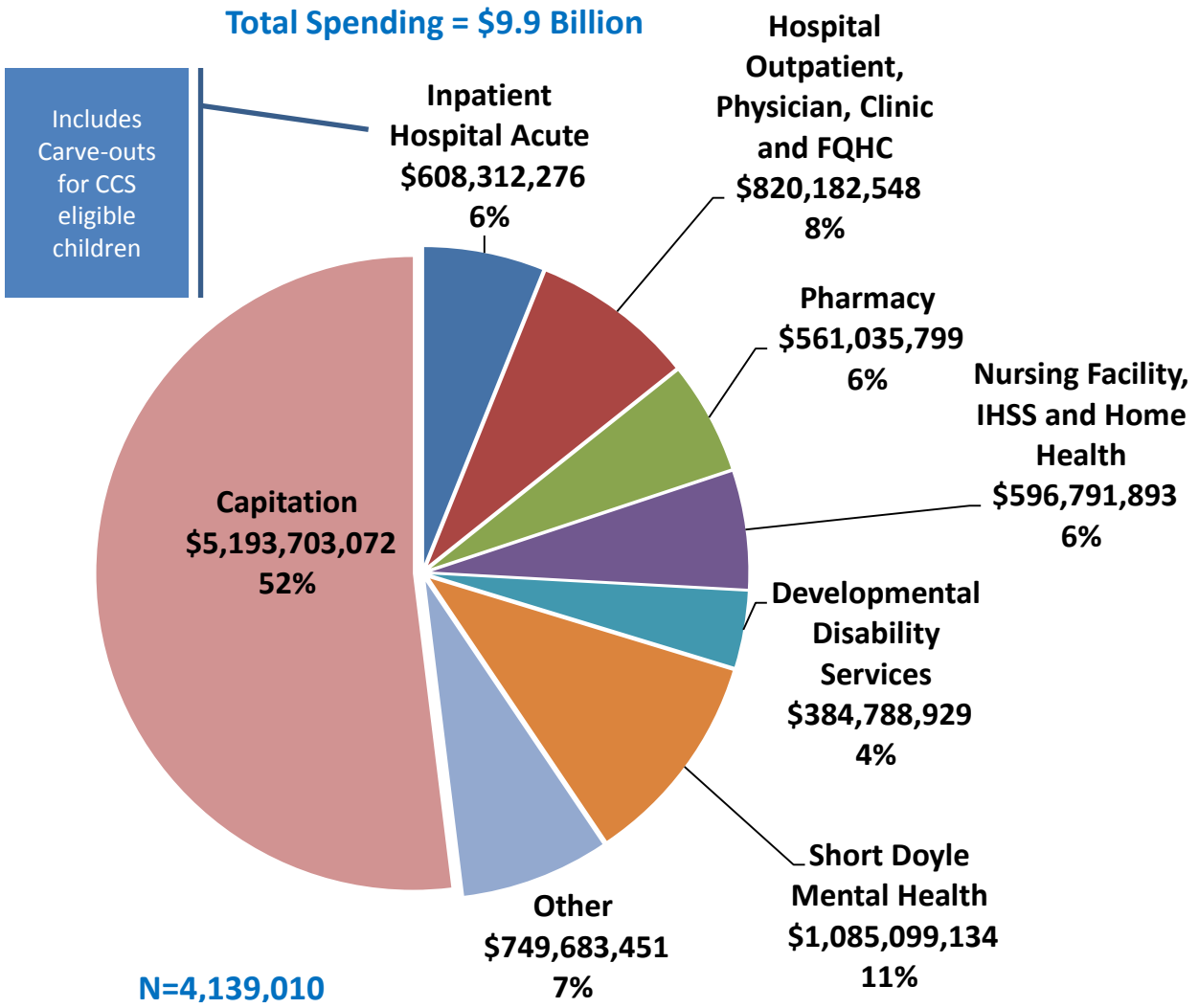
Disproportionate Spending By Medi-Cal Child Subgroups

N=4,139,010



Developmentally disabled children, children qualifying for the California Children's Services program, Foster care children, and other blind or disabled children represented nine percent of the total childhood population, but generated 38% percent of the total Medi-Cal spending, a disproportionate share of spending relative to their proportion of overall enrollment.

Medi-Cal Spending By Service Category; Children Ages 1 to 18

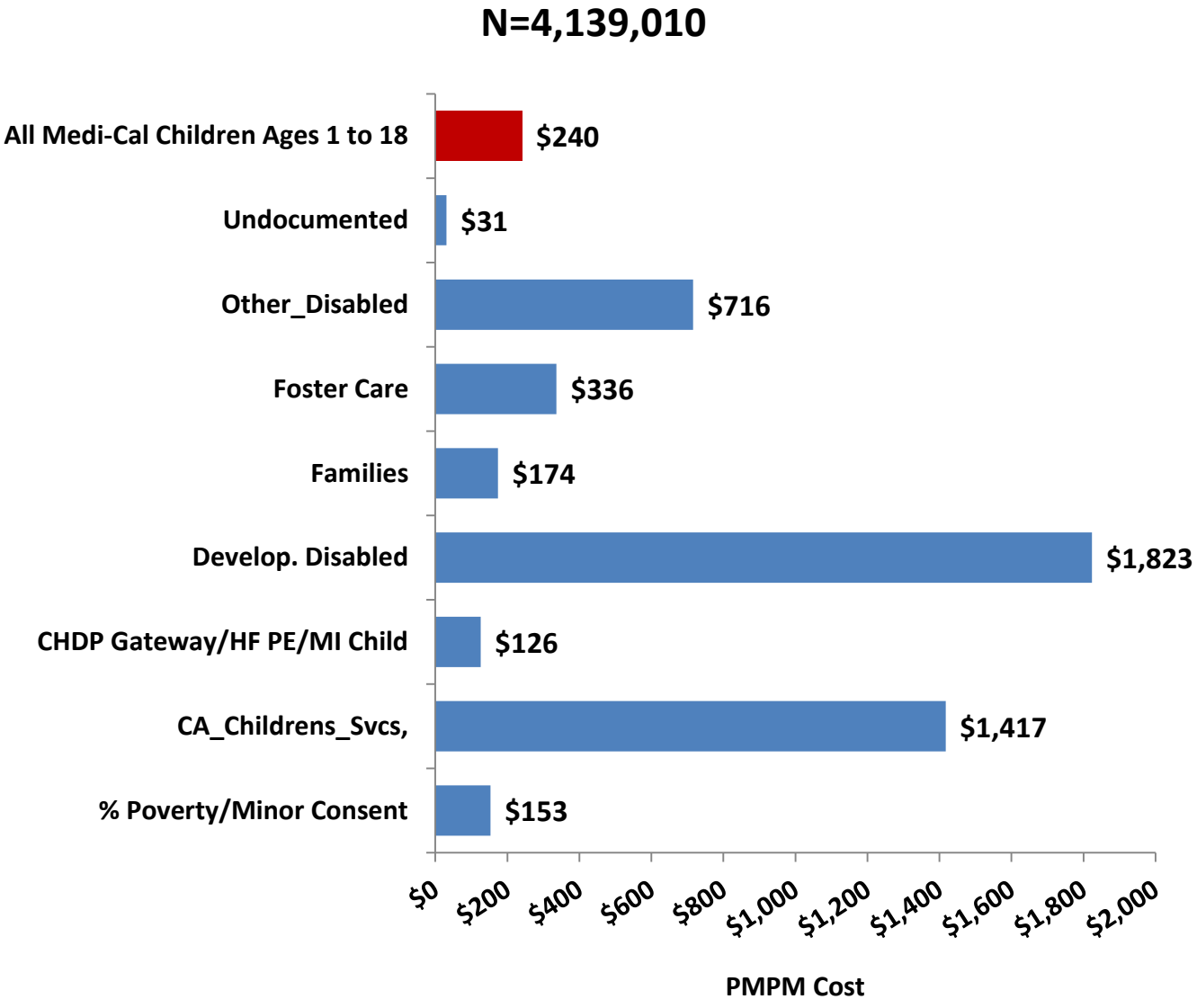


Spending on Medi-Cal's children is mixed among those participating in managed care and those participating in the traditional fee for service system.

Capitation spending represented 52% of all spending, accounting for $5.1 billion. Short-Doyle services accounted for 11% of spending, or $1 billion, followed by hospital, clinics and FQHCs at $820 million. Pharmacy accounted for 6% of spending, nursing facility/IHSS, HH accounted for 6%, developmental disability accounted or 6%, and acute inpatient accounted for 6%.

Included among the FFS spending presented are services excluded from managed care contracting (i.e. "carve-out services") as well as wrap-around services associated with FQHC utilization and payment.

Per-Member-Per-Month Cost By Child Subpopulation



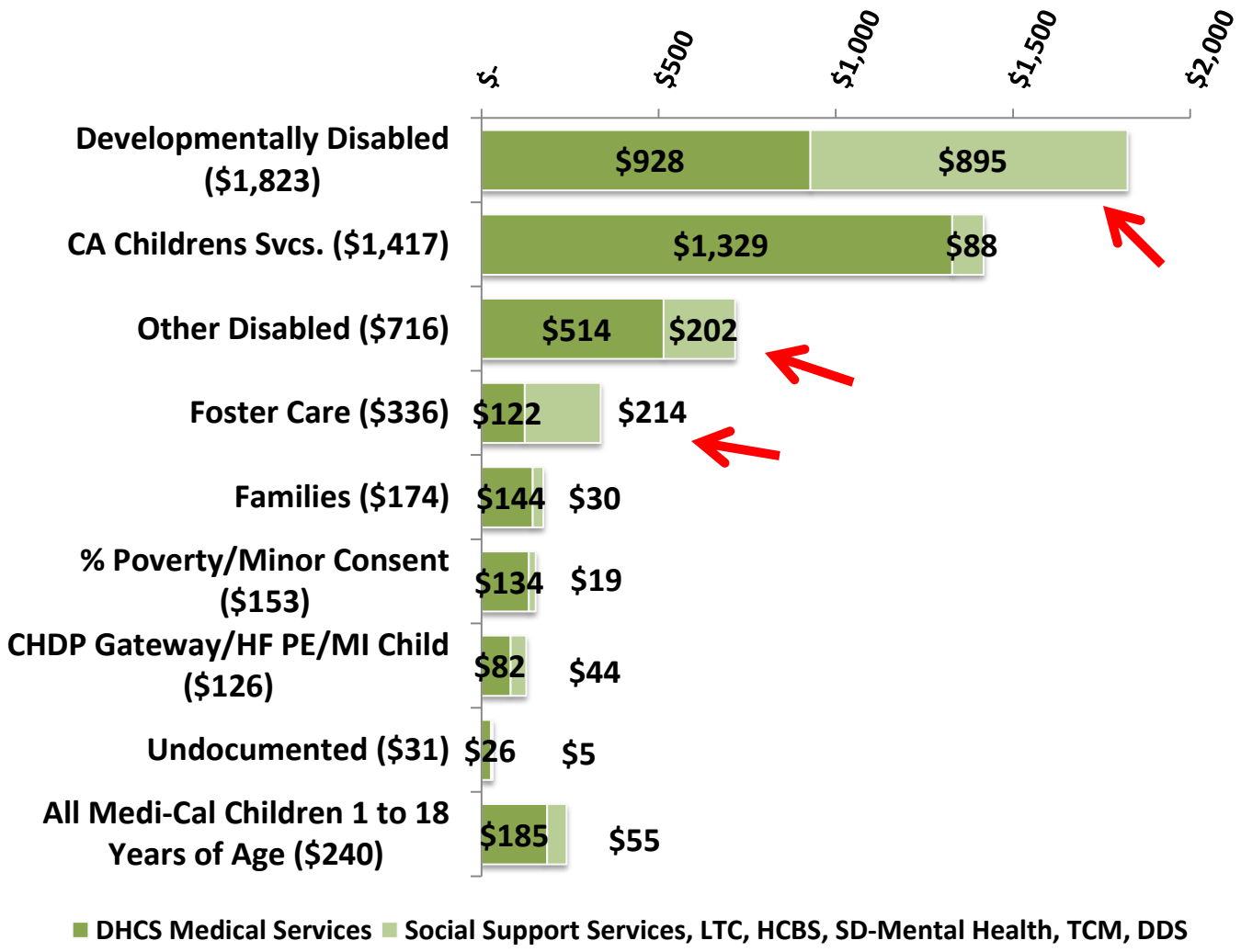
Per-member-per-month spending varied significantly by child subpopulation.

The developmentally disabled subpopulation generated the greatest PMPM spending ($1,823), followed by CCS eligible children ($1,417).

Other disabled children generated a PMPM spending of $716.

Medi-Cal's overall child PMPM spending was $240.

Medi-Cal Per Member Per Month Spending By Child Subpopulation and Service Category

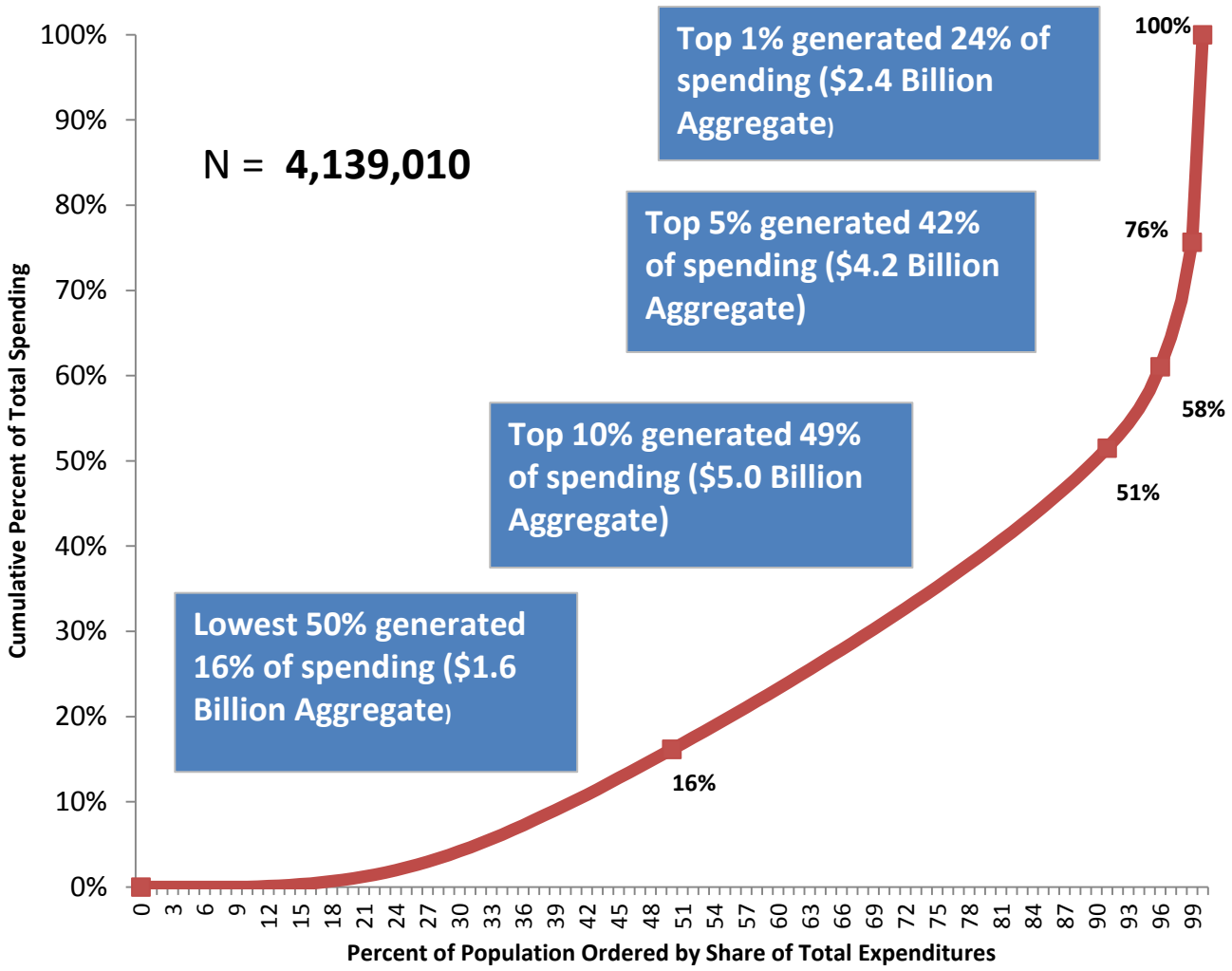


Medi-Cal spending PMPM varied by child subpopulation. The underlying health conditions and special needs of each subpopulation resulted in not only very different overall cost, but also the type of services utilized.

Roughly 50% of the PMPM spending related to the developmentally disabled subpopulation was associated to social support services, DDS, TCM, HCBS, etc.

Similarly, among the foster care subpopulations, 64% of the spending was associated with other services, primarily Short-Doyle mental health services. The other disabled subpopulation also displayed that roughly 28% of total spending was also associated with social support, etc. services.

A Small Proportion of Medi-Cal's Children Generates a Significant Proportion of Overall Spending



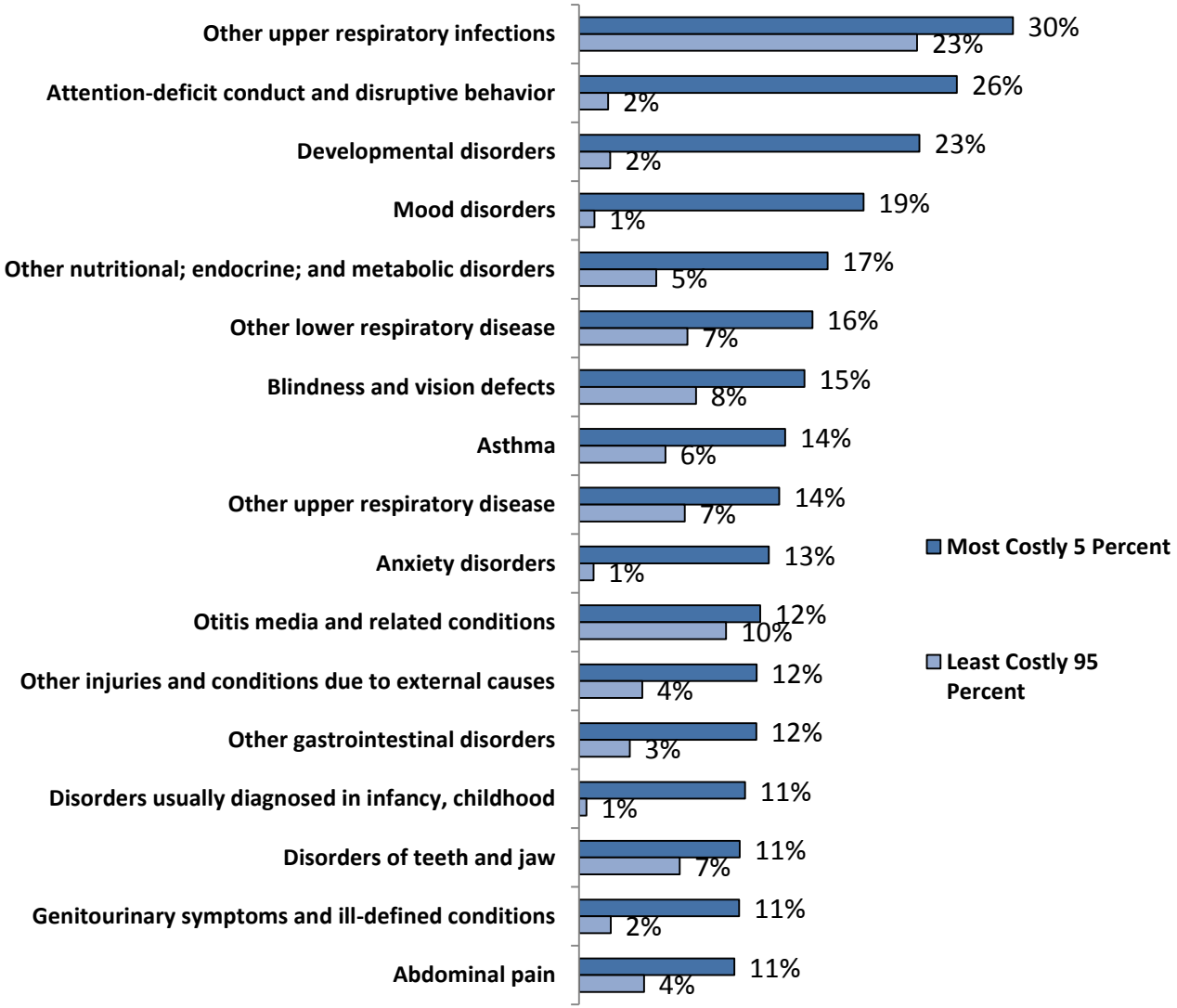
Consistent with other research on this topic, RASD found that a small percentage of children accounted for a disproportionately large share of Medi-Cal's total spending on this population.

Just 10% of Medi-Cal's population accounted for roughly 49% of total spending on children eligible for Medi-Cal only between the ages of 1 and 18.

The most costly 1% of the Medi-Cal eligible only population accounted for 24% of all spending, while the most costly 5% accounted for 42% of all spending on Medi-Cal children 1 to 18 years of age.

The least costly 50% of the population accounted for just 16% of total spending.

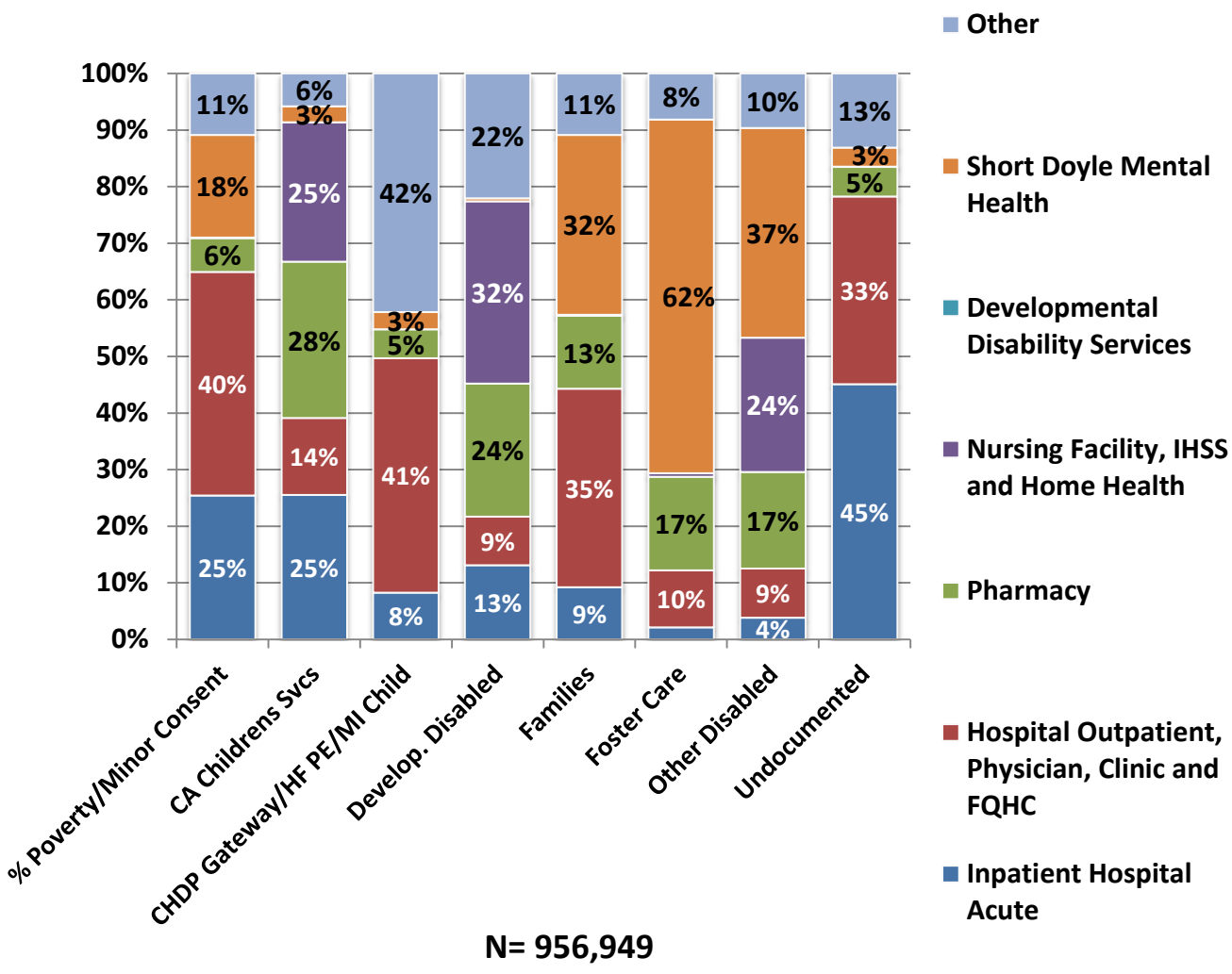
Comparing the Conditions Treated Among The Most Costly 5% of the Population to the Least Costly 95%



The most common diagnostic category for both populations was upper respiratory infections.

Significant differences were noted among the most costly 5% and least costly 95% for a number of conditions. In many cases, these differences were the result of underlying health status.

FFS Medi-Cal Spending By Service Category and FFS Child Subpopulation



N= 956,949

Medi-Cal spending among service categories/programs varied by child subgroup. Evaluating spending by service category can only be considered for individuals participating in Medi-Cal's traditional FFS system; therefore, the values presented in the figure represent only spending associated with children who participated in Medi-Cal's FFS system.

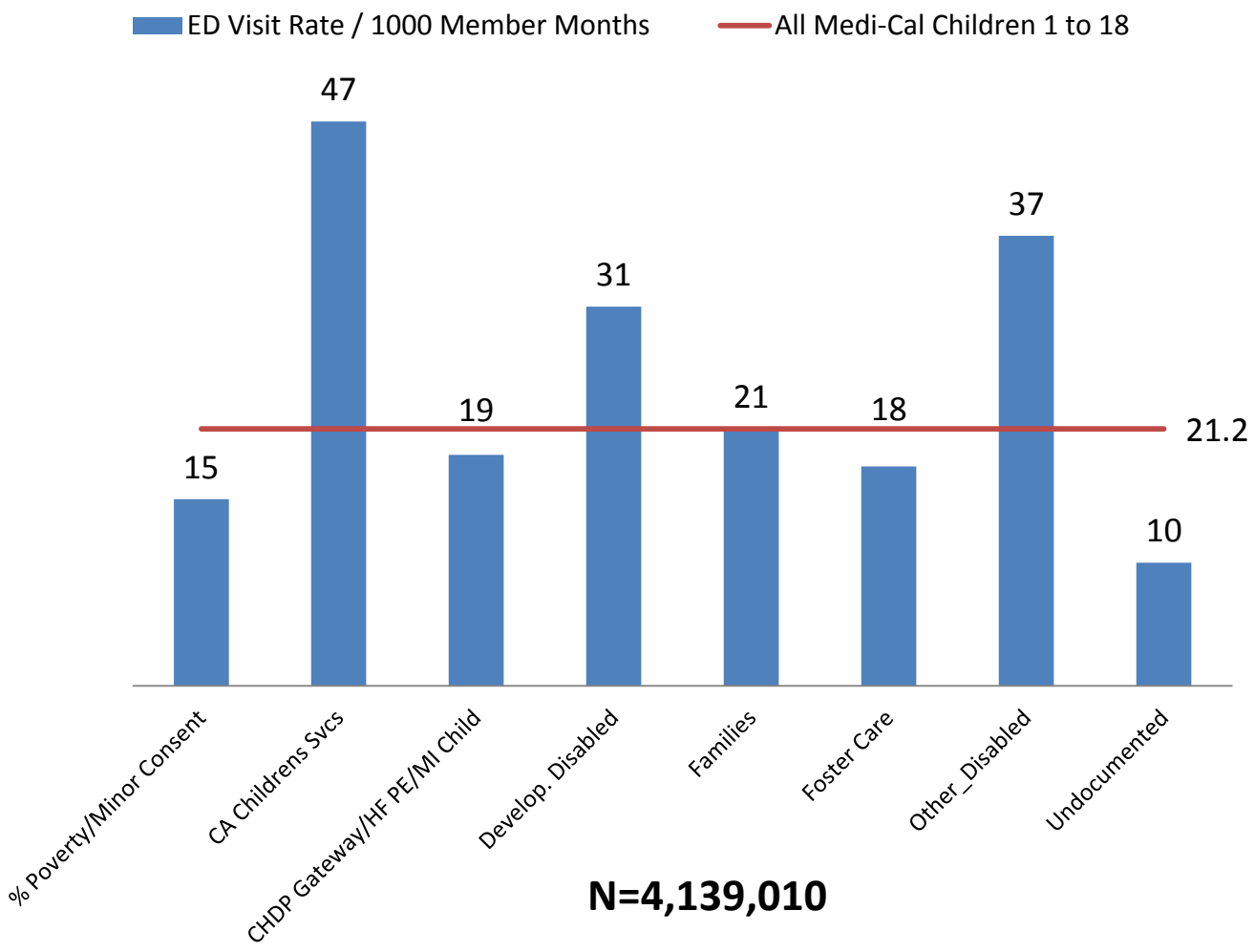
For example, among the foster care child subgroup, roughly 62% of all spending was associated with Short Doyle Mental Health. Similarly, among Medi-Cal's Other Disabled child subgroup, 37% of the spending was associated with Short-Doyle Mental Health.

Among the California Children's Services subgroup, 25% of the spending was associated with acute care hospital inpatient services, while only 3% was associated with Short-Doyle Mental Health services. California Children's Services subgroup also displayed the highest proportion of spending on pharmaceuticals, which accounted for 28% of spending among this subgroup. The undocumented child subgroup displayed a high proportion of spending on acute care hospital inpatient services (45%) and also hospital outpatient services/clinics (33%).

Understanding Medi-Cal's Child Population

EMERGENCY DEPARTMENT UTILIZATION

ED Visit Rate Per 1,000 Member Months By Child Subpopulation



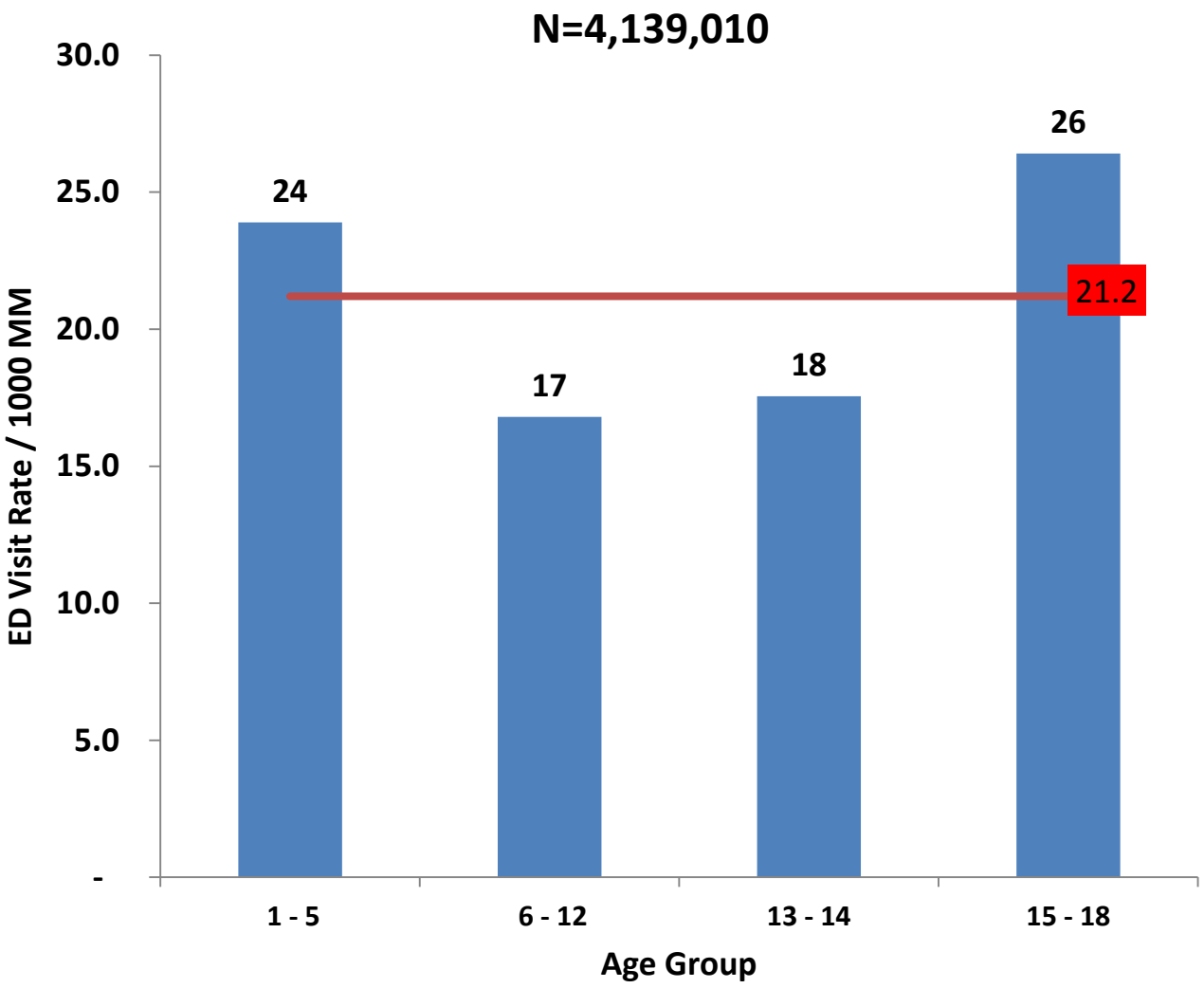
N=4,139,010

Variation in hospital emergency department visit rates per 1,000 member months was recognized.

Children eligible for California Children's Services between the ages of 1 and 18 produced the highest ED rates (46.6), while Undocumented children produced the lowest ED rates (10.2).

Three child subpopulations, CCS eligible children, developmentally disabled children, and other disabled children, produced ED rates per 1,000 member months that were greater than the overall child study population rate of 21.2.

ED Visit Rate Per 1,000 Member Months By Age Group

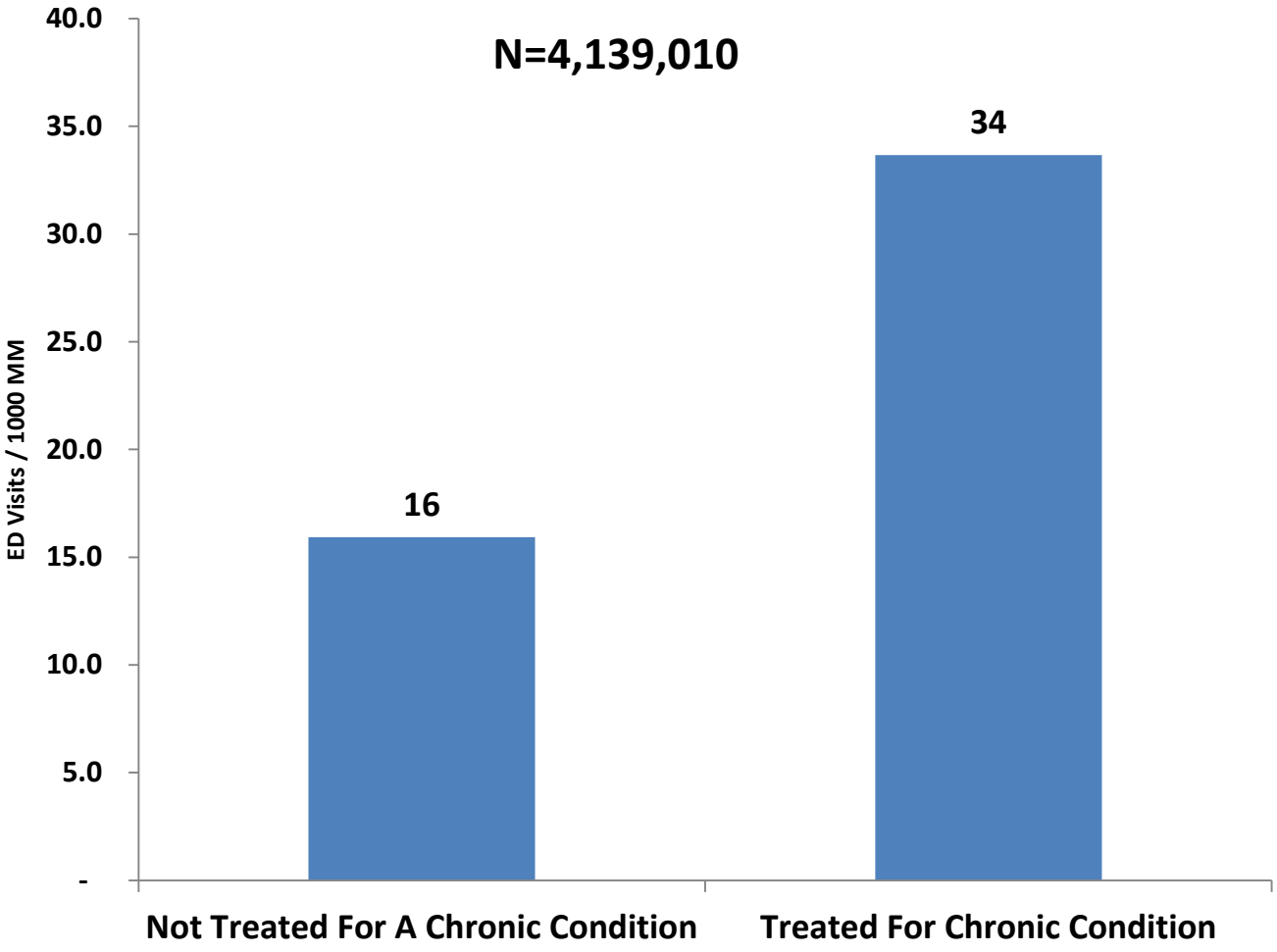


Hospital emergency department (ED) visits per 1,000 member months varied by age group.

The very young and the older age group disclosed the highest rates of ED use.

Children between the ages of 1 and 5 displayed an ED rate per 1,000 member months of 24, while those between the ages of 15 and 18 produced a rate of 26 visits per 1,000 member months.

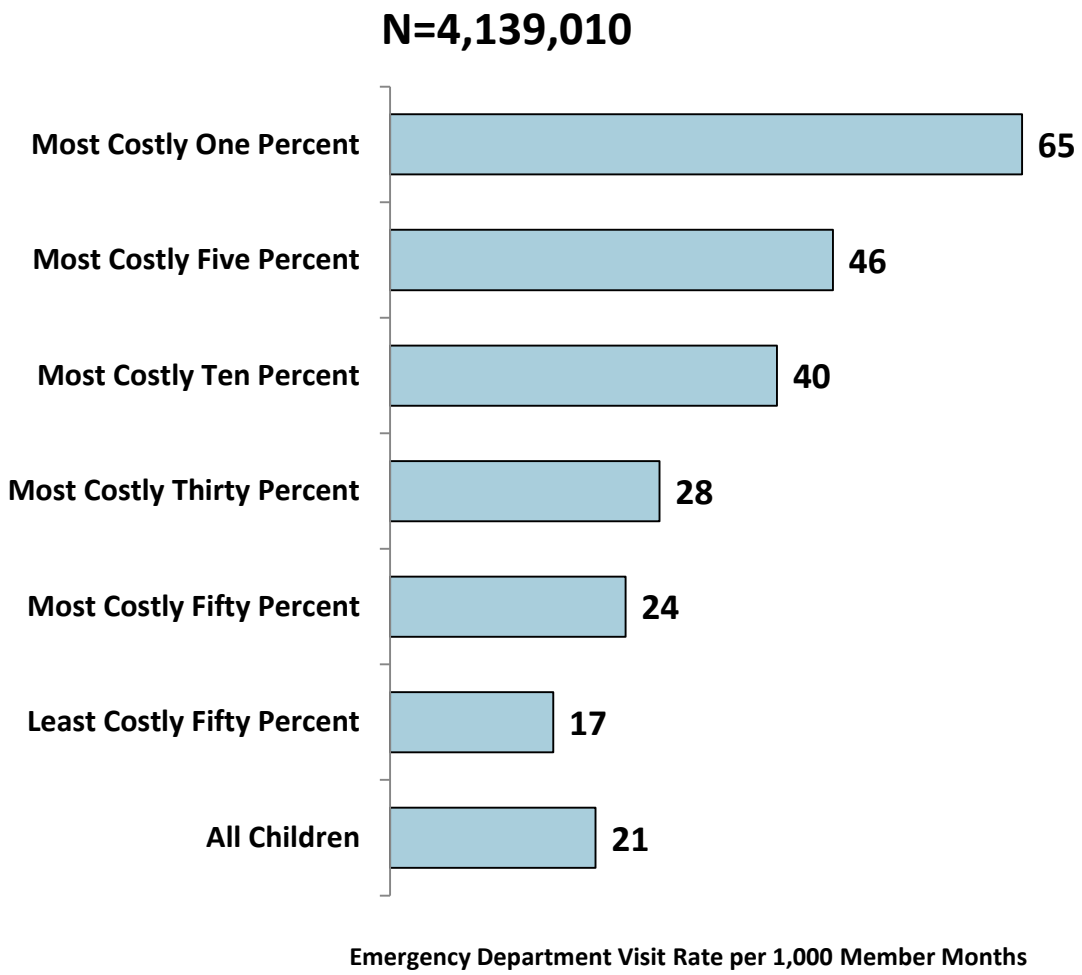
Emergency Department Visit Per 1,000 Member Months By Chronic Condition Status



Children who were treated for a chronic condition experienced hospital emergency department visits at a much higher rate than those without a chronic condition.

Children with at least one chronic condition visited hospital emergency departments at roughly 2 times the rate as those without a chronic condition.

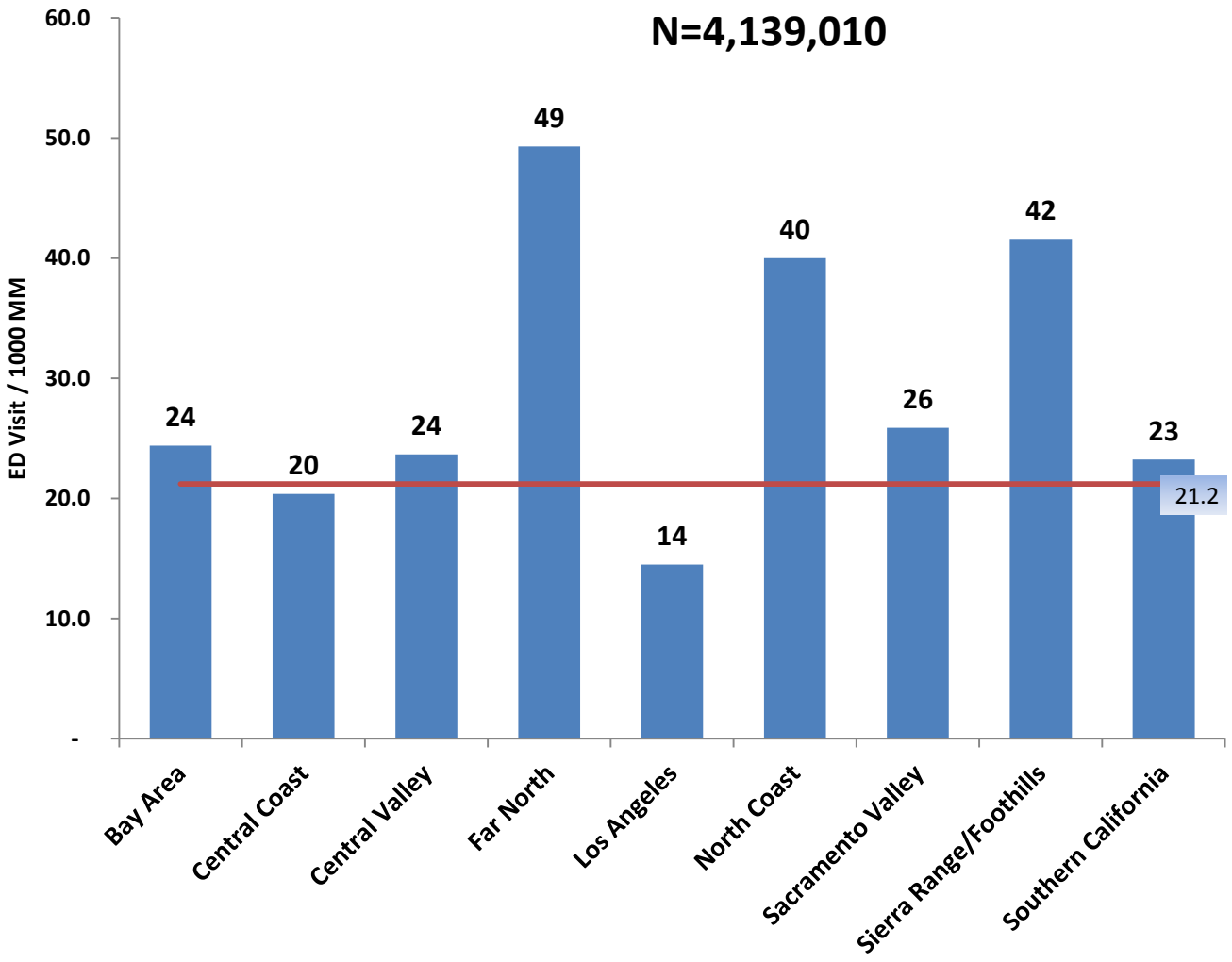
Hospital Emergency Department Visit Per 1,000 Member Months By Spending Cohort



By spending cohort, the most costly 1% of the Medi-Cal child study population recognized the highest ED visit rate per 1,000 member months (65.1).

The ED visit rate gradually decreased among the lower spending cohorts.

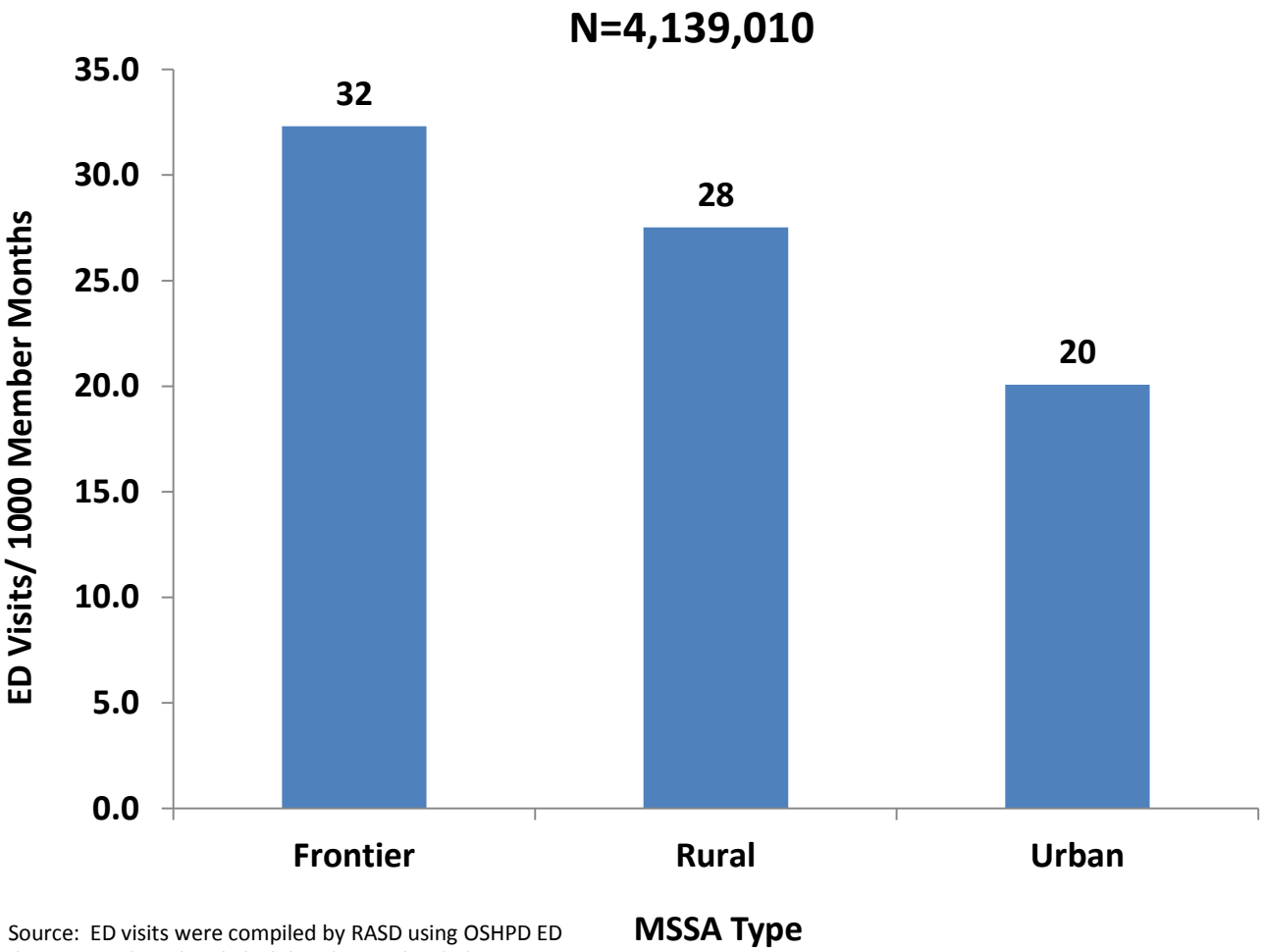
Emergency Department Visit Per 1,000 Member Months By Geographic Region



The statewide hospital emergency department visit rate per 1,000 member months for Medi-Cal children was 21.2. The northern regions of the state recognized the highest ED rates.

The far north generated an ED rate per 1,000 member months for children ages 1 to 18 of 49.3. The northern part of the state produced ED rates per 1,000 member months that were between 1.8 and 2.3 times greater than the statewide ED rate per 1,000 member months for Medi-Cal children. Similarly, the North Coast and Sierra Range/Foothills produced rates per 1,000 member months of 40.0 and 41.6 respectively.

Medi-Cal Child ED Rates Per 1,000 Member Months By MSSA For Medi-Cal Eligible Children Ages 1 to 18



Source: ED visits were compiled by RASD using OSHPD ED datasets and Medi-Cal eligibility data and includes CY 2011 dates of service.

Medi-Cal child hospital emergency department rates per 1,000 member months varied by Medical Statistical Service Area (MSSA) type.

Each MSSA is composed of one or more complete census tracts. MSSAs will not cross county lines. All population centers within the MSSA are within 30 minutes travel time to the largest population center.

- **Urban MSSA** - Population range 75,000 to 125,000. Reflect recognized community and neighborhood boundaries. Similar demographic and socio-economic characteristics.
- **Rural MSSA** - Population density of less than 250 persons per square mile. No population center exceeds 50,000.
- **Frontier MSSA** - Population density of less than 11 persons per square mile.

What Are The Most Common Reasons Medi-Cal Children Visit The Hospital Emergency Department?

Clinical Category	Rate per 10,000 Member Months
Other upper respiratory infections	24.4
Superficial injury; contusion	11.4
Otitis media and related conditions	10.8
Abdominal pain	9.5
Sprains and strains	8.3
Fever of unknown origin	8.2
Open wounds of head; neck; and trunk	7.2
Other injuries and conditions due to external causes	6.9
Nausea and vomiting	6.3
Asthma	6.3
Fracture of upper limb	5.2
Viral infection	5.1
Skin and subcutaneous tissue infections	4.9

N=4,139,010

The five most common reasons for visiting a hospital emergency department for children within the study population were upper respiratory infections followed by superficial injury/contusion, otitis media, abdominal pain, and sprains and strains.

Most Common Reasons Medi-Cal Children Visit The Hospital Emergency Department By Child Subpopulation

	California Children's Services	Develop-mentally Disabled	Adoption/ Foster Care	Other Disabilities	All Other Children
Other upper respiratory infections	1	1	2	1	1
Abdominal pain	5	3	1	2	2
Asthma	3		4	5	4
Epilepsy; convulsions			3	4	5
Fever of unknown origin	4	2			
Nausea and vomiting	2	4			
Other injuries and conditions due to external causes				3	
Otitis media and related conditions					3
Sprains and strains		5			
Superficial injury; contusion			5		
Total Visits in CY 2011	42,388	24,312	24,793	32,380	758,262
Average Monthly Enrollment	75,858	64,770	114,170	72,688	3,146,139

N=4,139,010

Four out of five of the child subpopulations had other respiratory infections as the most common diagnosis.

For the Adoption/ Foster Care subpopulation, the most common diagnosis was abdominal pain followed by other respiratory infections.

Most Common Reasons Medi-Cal Children Visit The Hospital Emergency Department By Age Group

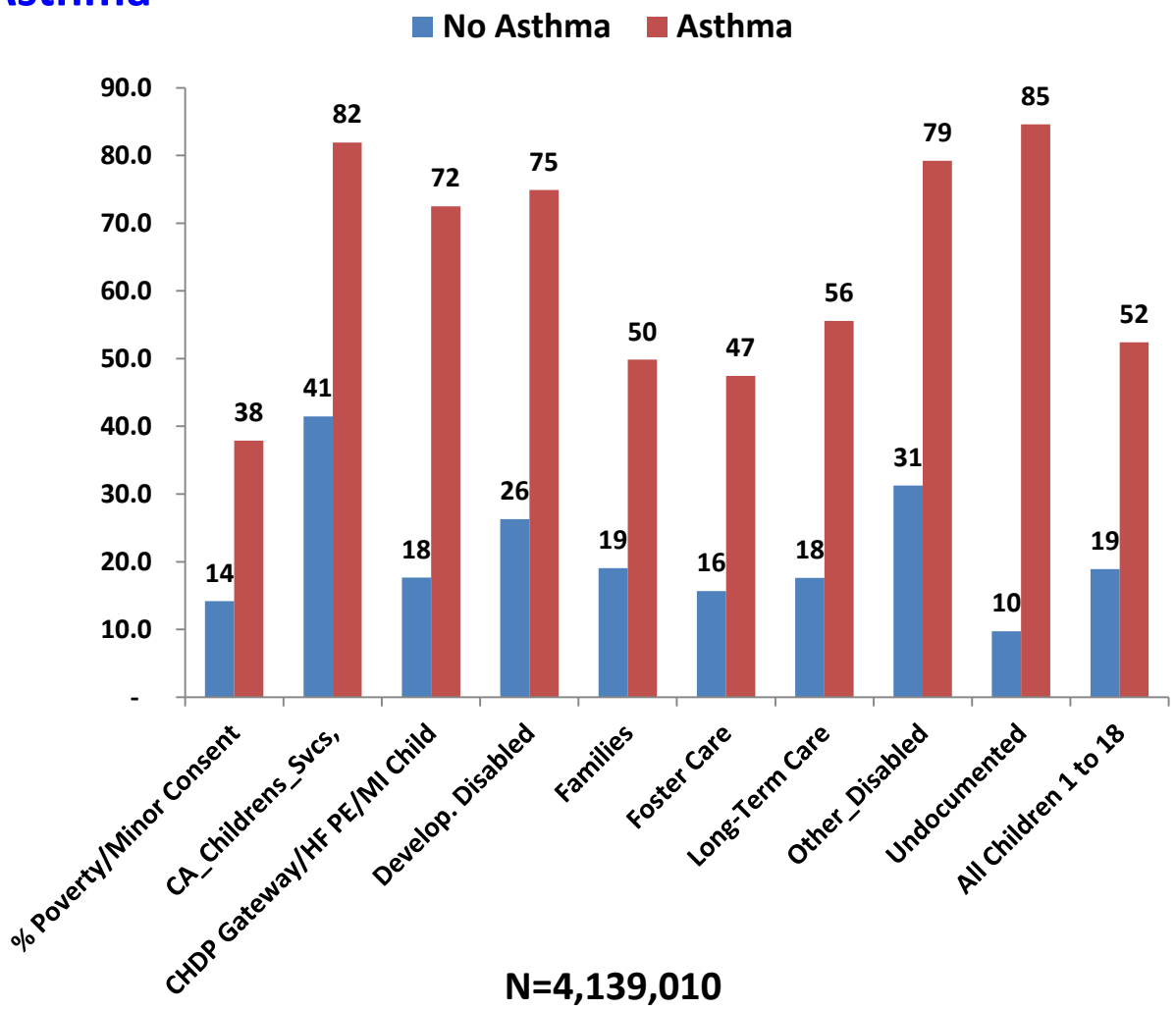
	Ages 1-5	Ages 6-12	Ages 13-14	Ages 15-18
Other upper respiratory infections	1	1	3	3
Sprains and strains		4	1	1
Superficial injury; contusion		2	2	4
Abdominal pain		3	4	2
Otitis media and related conditions	2	5		
Fever of unknown origin	3			
Open wounds of head; neck; and trunk	4			
Fracture of upper limb			5	
Nausea and vomiting	5			
Other complications of pregnancy				5
Total Visits in CY 2011	346,105	257,382	69,920	208,728
Average Monthly Enrollment	1,206,895	1,276,249	331,897	658,583

N=4,139,010

For children ages 1-12, other upper respiratory infections was the most common diagnostic category.

Children ages 13-18 were most commonly diagnosed with sprains and strains.

Emergency Department Visit Rate Per 1,000 Member Months By Child Subpopulation With and Without Asthma

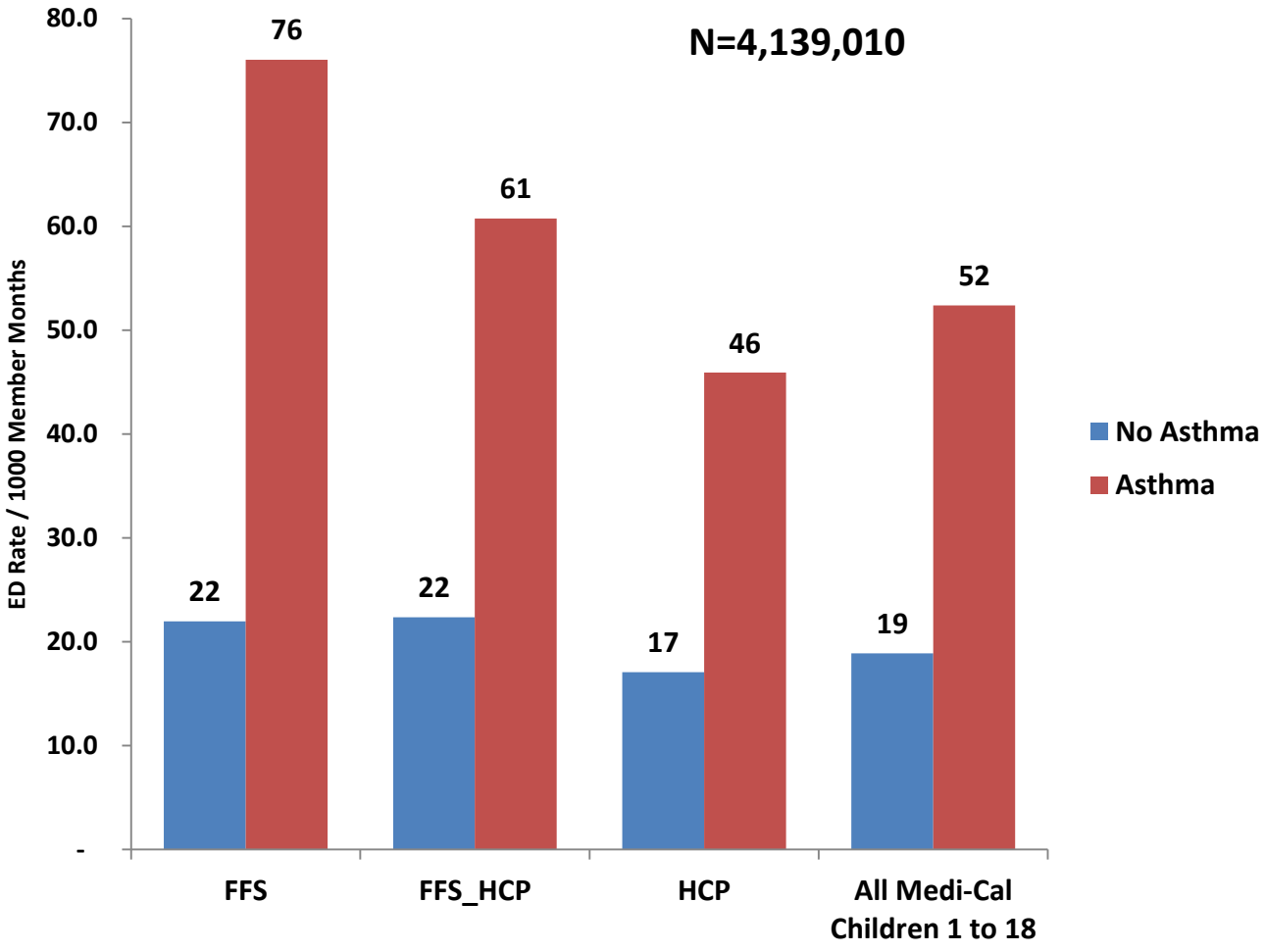


Regardless of child subpopulation, the presence of asthma as a treatment condition resulted in an increased emergency department visit rate.

For example, children eligible for CCS who had no indication of being treated for asthma generated an ED visit rate per 1,000 member months of 41, while CCS eligible children who had been treated for asthma generated an ED visit rate of 82, a rate that was two times greater than those without asthma treatment.

This relationship, children treated for asthma producing higher ED rates, was seen among all child subpopulations evaluated.

Emergency Department Visits Per 1,000 Member Months By Health Delivery System With and Without Asthma



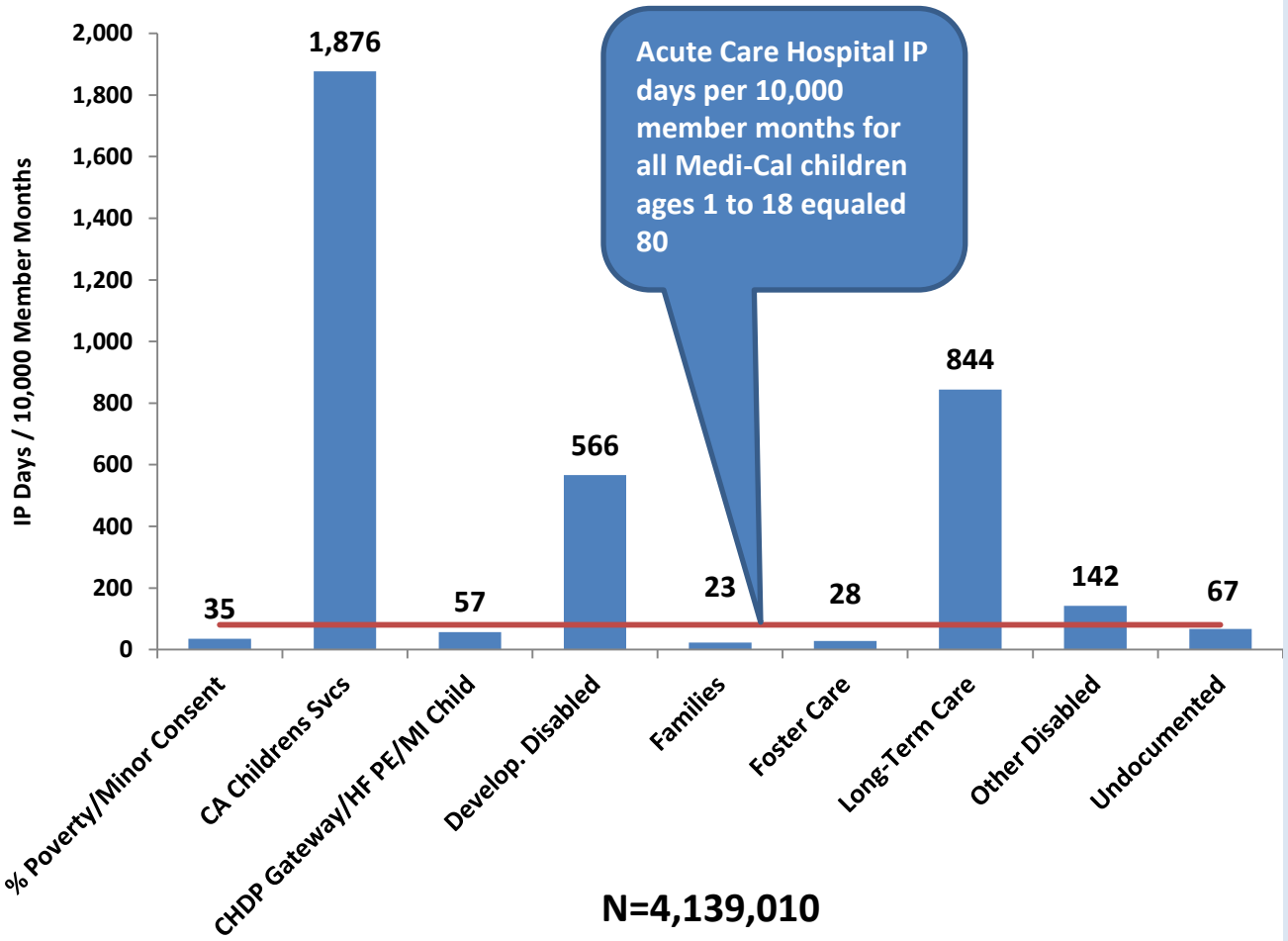
The presence of asthma as a treated medical condition resulted in elevated emergency department visit rates per 1,000 member months.

Regardless of health delivery system, study population children treated for asthma generated much higher emergency department rates per 1,000 member months than those who had not been treated for asthma.

Understanding Medi-Cal's Child Population

HOSPITAL UTILIZATION

Acute Care Hospital Inpatient Days Per 10,000 Member Months By Eligibility Pathway

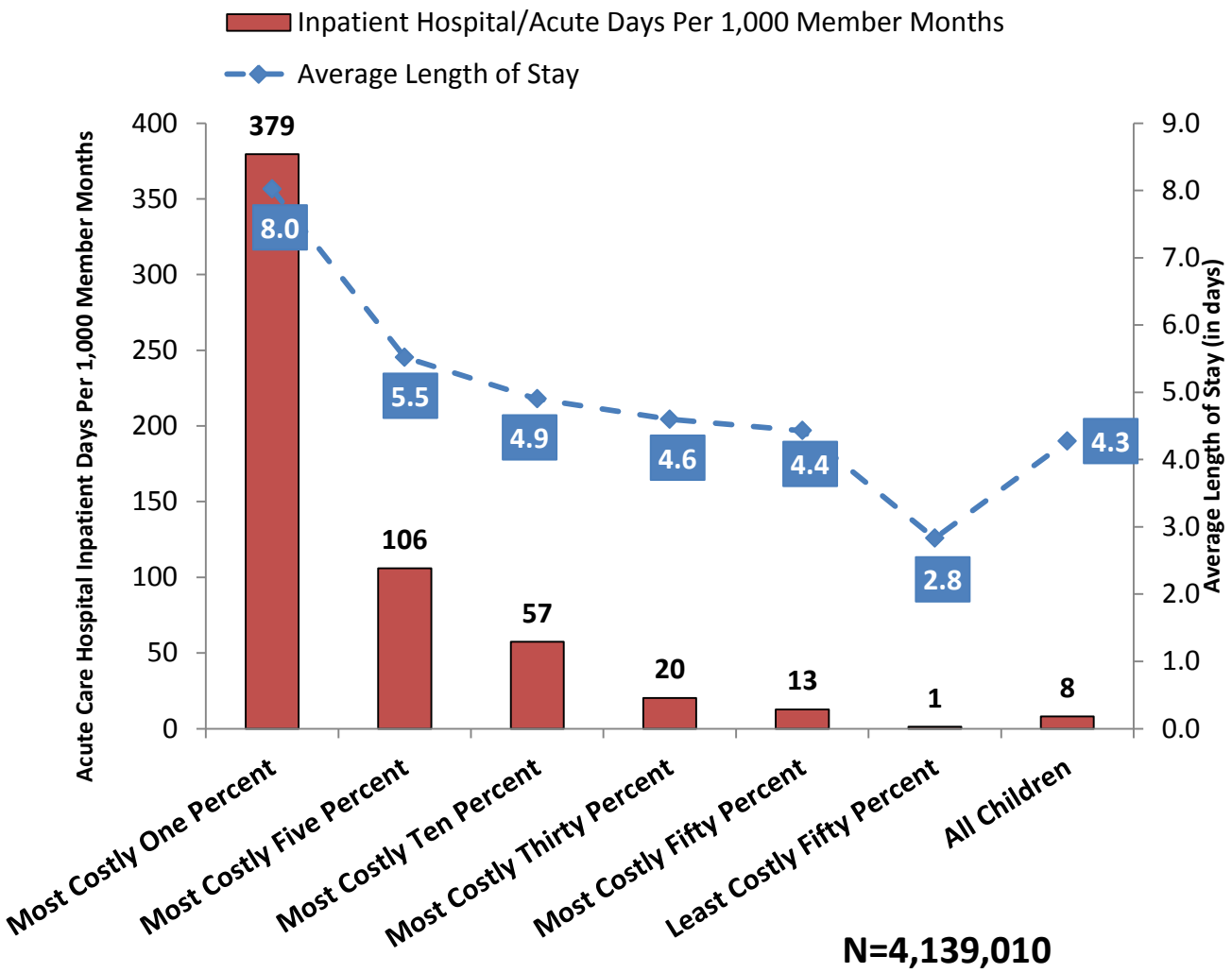


N=4,139,010

As expected, the highest inpatient utilization rates were seen among the California Children Services (CCS) population, children residing in long-term care, and those who were classified as disabled.

CCS children recorded an inpatient utilization rate per 10,000 member months of 1,876, which was 3.3 times higher than the developmentally disabled population and 13 times greater than children in the other disabled subpopulation.

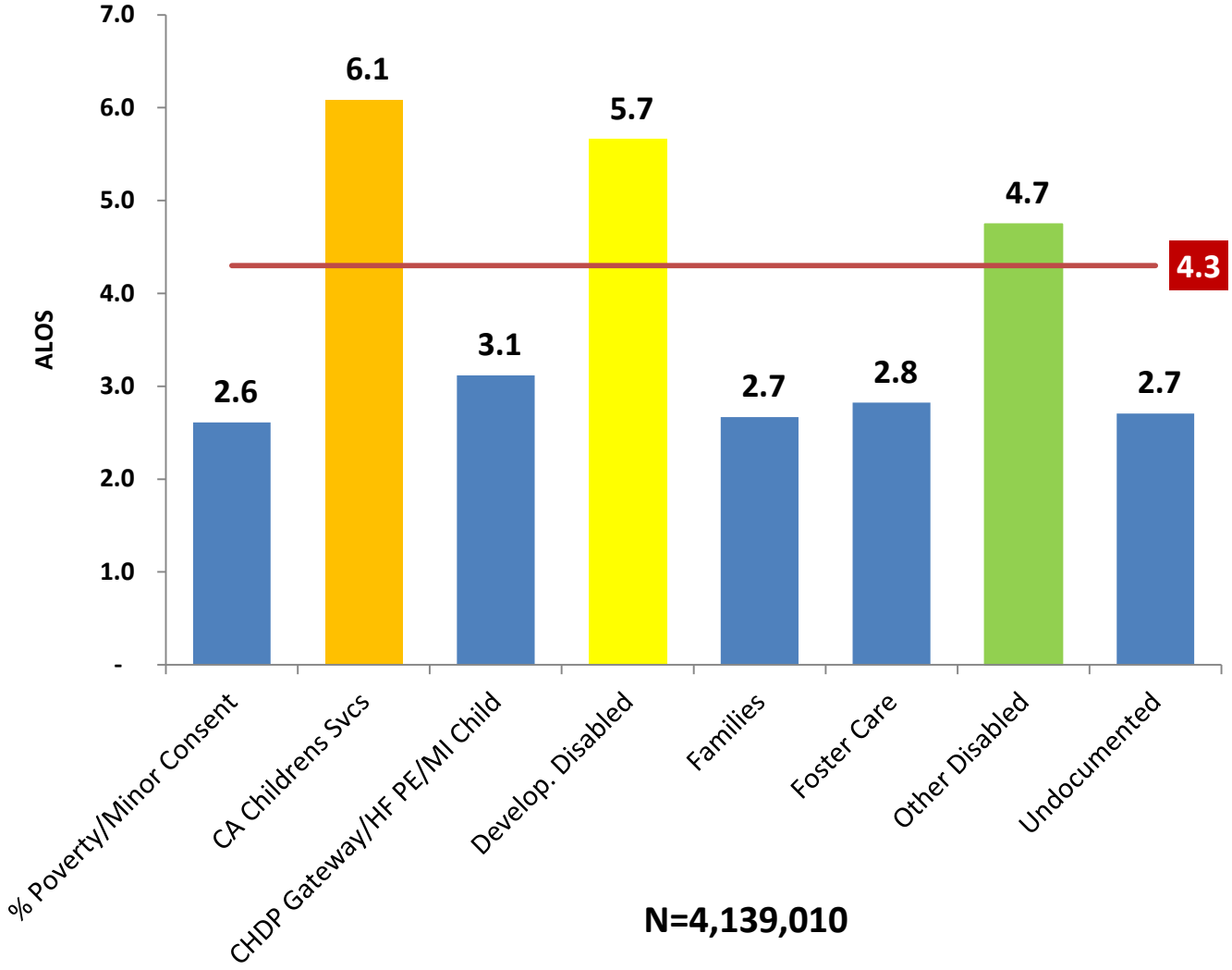
Acute Care Hospital Inpatient Days Per 1,000 Member Months And Average Length of Stay By Spending Cohort



The most costly one percent of children had an average length of hospital stay nearly twice as long as all Medi-Cal children combined.

The most costly 1% also had over 47 times the rate of hospitalization as all Medi-Cal children combined.

Acute Care Hospital Inpatient Average Length of Stay By Child Subpopulation



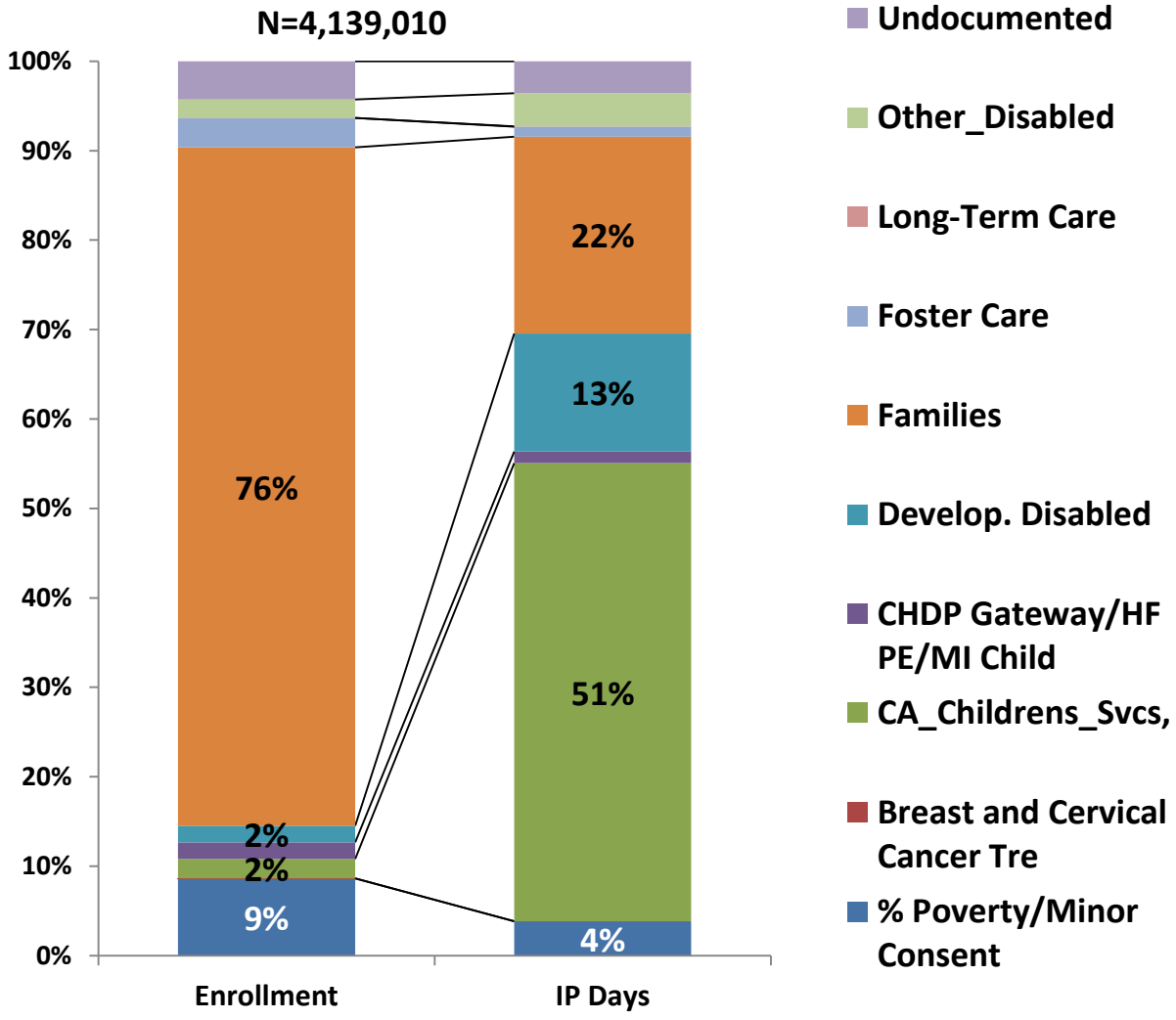
N=4,139,010

The average length of stay (ALOS) varied by Medi-Cal child subpopulation. Subpopulations that included children with disabilities, congenital defects, chronic conditions, etc. produced much higher ALOS's than those enrolled in Families and % of Poverty programs.

Children eligible for CCS produced the longest ALOS (6.1) followed by children classified as developmentally disabled (5.7), and children with other disabilities (4.7).

The Families, Undocumented, % of Poverty, CHDP, etc. all produced similar ALOS.

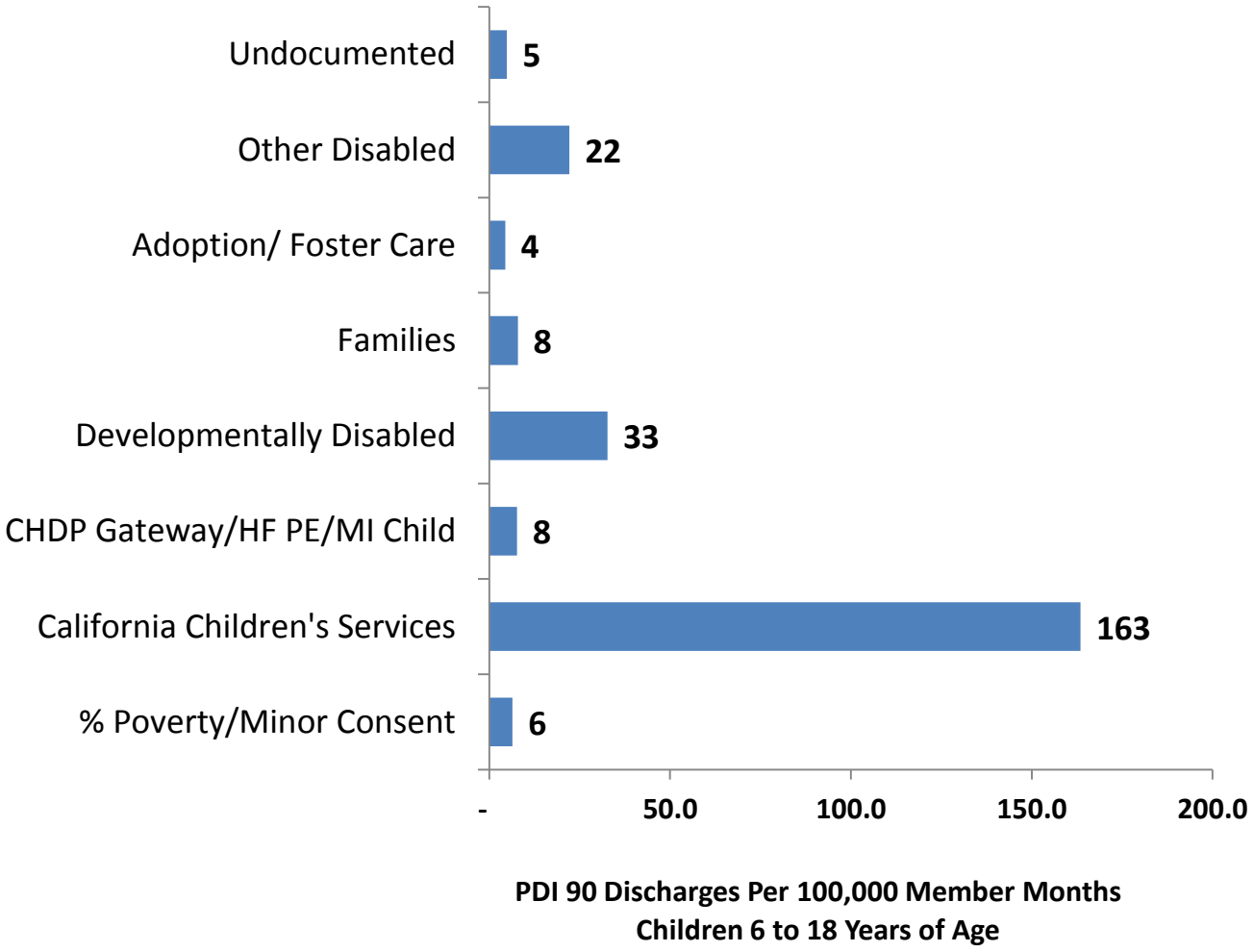
Enrollment vs. Hospital Inpatient Days By Child Subpopulation



California Children's Services constituted 2% of Medi-Cal enrollment between the ages of 1 and 18, but generated 51% of all acute care inpatient days for this age group throughout the year.

Similarly, children classified as developmentally disabled and receiving DD services constituted 2% of total Medi-Cal child enrollment and generated 13% of total acute care inpatient days. These two child subpopulations accounted for 4% of total Medi-Cal child enrollment, but produced close to two-thirds of all acute care hospital inpatient days.

Pediatric Quality Indicator Hospital Discharges By Child Subpopulation (Ages 6 to 18)



PDI 90 (Pediatric Quality Overall Composite) is a preventative quality indicator developed by the Agency for Health Care Quality and Research (AHRQ) designed to measure the rate of potentially preventable inpatient hospital discharges among groups. PDIs identify hospitalizations that good outpatient care can potentially prevent and for which early intervention can prevent complications or more severe disease.

The highest PDI rates by far were among the high-need California Children's Services, Developmentally Disabled, and Other Disabled cohorts.

It should be noted, that while these hospital admissions and discharges may potentially be prevented, in some cases it is not possible to prevent them due to underlying health conditions.

Most Common Acute Care Hospital Discharges By Diagnostic Related Groups (DRG)

Clinical Category	Rate per 100,000 Member Months
Vaginal Delivery W/O Complicating Diagnoses	13.95
Bronchitis & Asthma W/O CC/MCC	8.20
Appendectomy W/O Complicated Principal Diag W/O CC/MCC	7.82
Esophagitis, Gastroent & Misc Digest Disorders W/O MCC	6.62
Simple Pneumonia & Pleurisy W CC	4.75
Simple Pneumonia & Pleurisy W/O CC/MCC	4.43
Bronchitis & Asthma W CC/MCC	4.24
Cellulitis W/O MCC	3.94
Seizures W/O MCC	3.89
Chemotherapy W/O Acute Leukemia As Secondary Diagnosis W CC	3.71
Lower Extrem & Humer Proc Except Hip,foot,femur W/O CC/MCC	3.35
Diabetes W/O CC/MCC	3.09
Otitis Media & Uri W/O MCC	3.05

Among Medi-Cal children the most common diagnosis for inpatient hospitalization was childbirth (nearly 14 per 100,000 member months).

Bronchitis and Asthma were the next most common reasons for hospitalization.

Note:
CC=Complication or Comorbid Condition
MCC=Major Complications or Comorbidities

The Most Common Discharges by Diagnostic Related Groups for Medi-Cal's Child Subpopulations

	California Children's Services	Develop-mentally Disabled	Adoption/ Foster Care	Other Disabled	All Other Children
Esophagitis, gastroenteritis and miscellaneous digestive disorders without MCC	3	3	5	2	4
Vaginal delivery without complicating diagnoses			1		1
Bronchitis & asthma with CC/MCC		4	3	3	
Appendectomy without complicated principal diagnosis without CC/MCC			2		2
Bronchitis & asthma without CC/MCC				1	3
Simple pneumonia & pleurisy with CC		2		4	
Diabetes without CC/MCC	1				
Seizures without MCC		1			
Lower extremity and humerus procedures except hip, foot, or femur without CC/MCC	2				
Simple pneumonia & pleurisy without CC/MCC				5	5
Hip & femur procedures except major joint without CC/MCC	4				
Poisoning & toxic effects of drugs without MCC			4		
Red blood cell disorders without MCC	5				
Seizures with MCC		5			
Total Hospital Stays in 2011	28,088	7,780	1,361	2,612	38,155
Average Monthly Enrollment	75,858	64,770	114,170	72,688	3,146,139

The Most Common Discharges by Diagnostic Related Groups for Medi-Cal Children by Age Group

	Ages 1 - 5	Ages 6 - 12	Ages 13 - 14	Ages 15 - 18
Appendectomy without complicated principal diagnosis without CC/MCC		1	1	2
Bronchitis & asthma without CC/MCC	1	2		
Esophagitis, gastroenteritis and miscellaneous digestive disorders without MCC	5	3	2	
Vaginal delivery without complicating diagnosis				1
Simple pneumonia & pleurisy without CC/MCC	2			
Chemotherapy without acute leukemia as secondary diagnosis with CC		5	4	
Appendectomy with complicated principal diagnosis without CC/MCC		4	5	
Simple pneumonia & pleurisy with CC	3			
Diabetes without CC/MCC			3	
Cesarean Section without CC/MCC				3
Bronchitis & asthma with CC/MCC	4			
Other antepartum diagnoses with medical complications				4
Vaginal delivery with complicating diagnoses				5
Total Hospital Stays in 2011	25,067	19,987	6,412	26,530
Average Monthly Enrollment	1,206,895	1,276,249	331,897	658,583